Motorola Solutions - Unified Retail Communications Installation/Configuration Guide

Draft

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Unified Retail Communications Installation/Configuration Methodology

1.0 Overview

Motorola Solutions Unified Retail Communications (URC) voice platform combines many essential voice and wireless data technologies to enable customers with an all in one solution for wireless control, IP network services, Voice and PBX services as well as Motorola's unique Radio Link Services (RLS) for Radio integration and embedded PTT functionality. The URC also offers an easy to configure next generation user interface for simplified use and navigation.

2.0 Physical Characteristics

The URC appliance consists of a 2U, 19 inch rack mountable chassis that provides all network and communications connectivity via the front panel. The Chassis is known as the NX Chassis.

The Common AvaaNX Models are: (see specs below for each model)

NX4500
NX4524 – with 24 PoE Ethernet Ports
NX6500
NX6524 – with 24 PoE Ethernet Ports

PRODUCT CONFIGURATIONS	NX 4500	NX 4524	NX 6500	NX 6524
Wireless Controller	Yes	Yes	Yes	Yes
Ethernet Switching	No	Yes	No	Yes
10/100/1000 Mbps Uplink Ports	2	2	2	2
10/100/1000 Mbps PoE LAN Ports	-	24	-	24
Memory	4 GB	4 GB	16 GB	16 GB
Storage	250 GB	250 GB	250 GB	250 GB
USB	4	4	4	4
Expansion Slots	4	4	4	4
Access Point Capacity	72	72	264	264
CPU	I3-540 (Dual-Core)	I3-540 (Dual-Core)	I5-750 (Quad-Core)	I5-750 (Quad-Core)
3rd party Applications	Limited	Limited	Yes*	Yes*

- **24 Port PoE**

The URC voice appliance chassis comes in an NX4500 and NX6500 form factor either in POE (power over Ethernet) or non-POE configurations. The 24 port gigabit Ethernet switch provides power for APs as well as IP Phones that shall be connected to the system.

- **4 Port USB Ports**

Note: An Radio interface unit for RLS can be connected the USB port # 4 only.

Note: Use to load Operating System

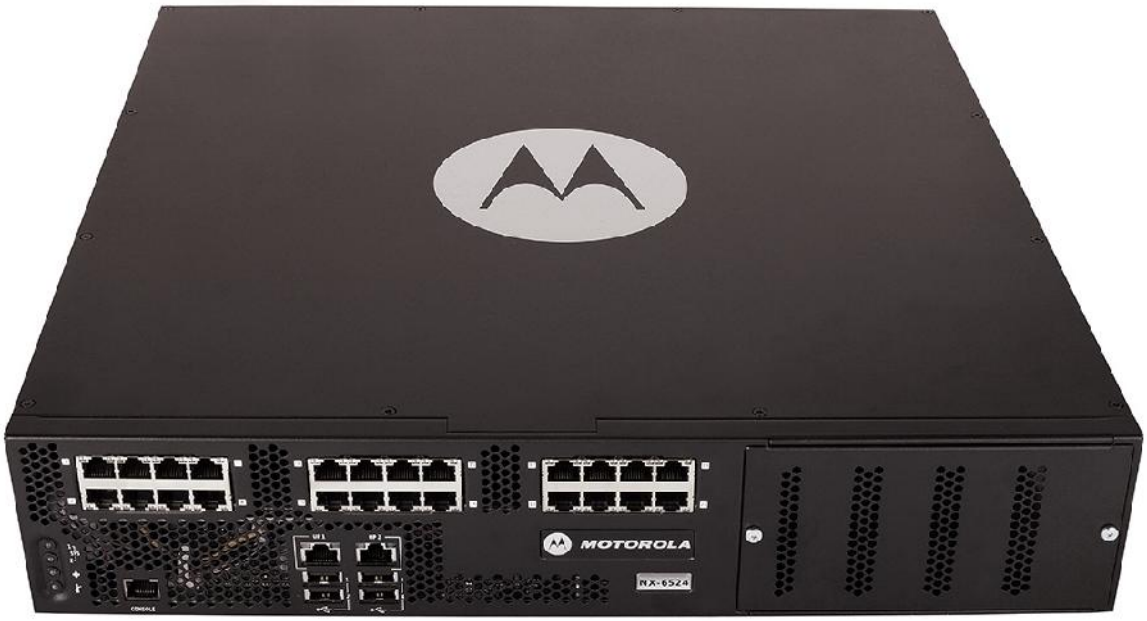
- **4 Port Expansion Slots**

Supports expansions slots for PSTN and Network interface connections such FXO (trunk Line), FXS (Station Line) and T1/E1 digital TDM trunk connections to the PSTN or other PBX systems.

- **Integrated System LED Lights:**

4 LEDs on the front for quick system check on operation status:

System 1
System 2
Fan
Temp



3.0 System Preparation

Once obtaining the NX platform and all its appropriate licensing, the system will need to be installed. The following procedure includes system installation and setup procedures from initial procurement of operating system and applications. The following procedure is for BETA systems only and customer purchased systems may be different as OS and applications shall be pre-loaded.

Obtain the source installation file to load OS and WING Applications

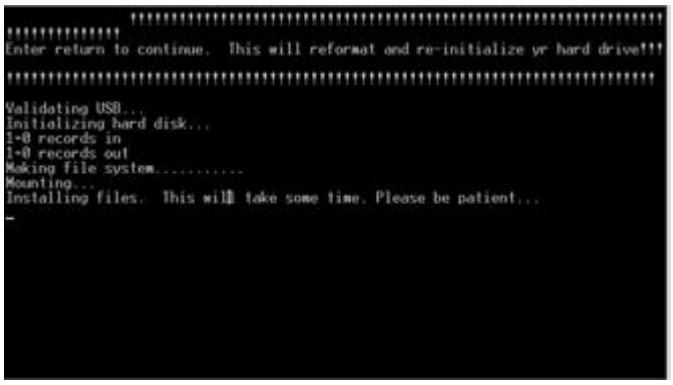
4.0 Lab System Installation Procedure

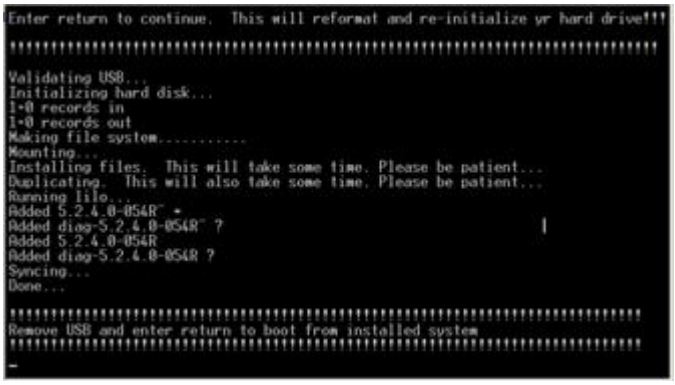
1. Insert the appropriate installation file on a USB drive and inmsert into USB port 1 on the NX box.
2. Select F3 on startup to select Boot Drive Menu.
3. Select load from USB FLASH DRIVE on the menu

Please select boot device:
HDD:P0-ST9500420BS
USB:hp USB FLASH DRIVE 0.00
↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults

4. Follow the screens for installation steps performed

Enter return to continue. This will reformat and re-initialize yr hard drive!!!
Validating USB...
Initializing hard disk...
1+0 records in
1+0 records out
Making file system.....


Enter return to continue. This will reformat and re-initialize yr hard drive!!!
Validating USB...
Initializing hard disk...
1+0 records in
1+0 records out
Making file system.....
Mounting...
Installing files. This will take some time. Please be patient...


Enter return to continue. This will reformat and re-initialize yr hard drive!!!
Validating USB...
Initializing hard disk...
1+0 records in
1+0 records out
Making file system.....
Mounting...
Installing files. This will take some time. Please be patient...
Duplicating. This will also take some time. Please be patient...
Running lilo...
Added 5.2.4.0-054R* +
Added diag-5.2.4.0-054R* ?
Added 5.2.4.0-054R
Added diag-5.2.4.0-054R ?
Syncing...
Done...
Remove USB and enter return to boot from installed system

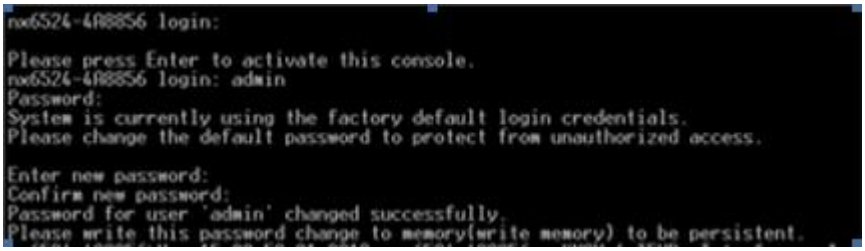
4.1 First Console Login

Once the system has been installed.

Connect the console serial port of the NX chassis. You will login for the first time and change the administrator password for security.

1. Login as ***admin/motorola***

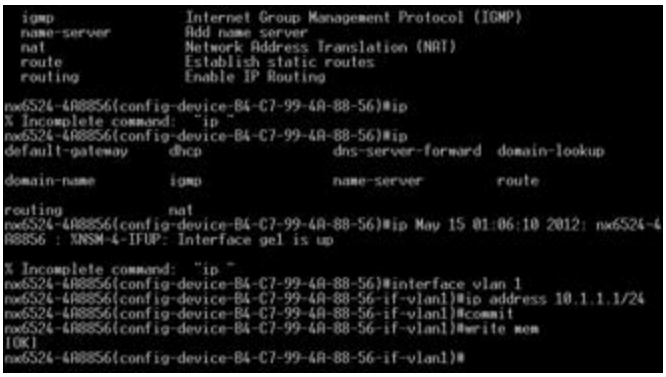
2. Change admin password


nx6524-4A8856 login:
Please press Enter to activate this console.
nx6524-4A8856 login: admin
Password:
System is currently using the factory default login credentials.
Please change the default password to protect from unauthorized access.
Enter new password:
Confirm new password:
Password for user 'admin' changed successfully.
Please write this password change to memory(write memory) to be persistent.

nx6524-4A8856 login:
Please press Enter to activate this console.
nx6524-4A8856 login: admin
Password:
System is currently using the factory default login credentials.
Please change the default password to protect from unauthorized access.
Enter new password:
Confirm new password:
Password for user 'admin' changed successfully.
Please write this password change to memory(write memory) to be persistent.
nx6524-4A8856>May 15 00:59:01 2012: nx6524-4A8856 : %NSM-4-IFUP: Interface ge1 i
s up
nx6524-4A8856>en
nx6524-4A8856#config
Enter configuration commands, one per line. End with CNTL/Z.
nx6524-4A8856(config)#self
nx6524-4A8856(config-device-B4-C7-99-4A-88-56)#May 15 01:03:16 2012: nx6524-4A88
56 : %NSM-4-IFDOWN: Interface ge1 is down
May 15 01:03:57 2012: nx6524-4A8856 : %NSM-4-IFUP: Interface up1 is up
nx6524-4A8856(config-device-B4-C7-99-4A-88-56)#

4.2 First Time IP Address Setup

1. Type ***en*** (short for enable to get to command mode)
2. Type ***config*** to get to configuration mode
3. Type ***self -*** to configure the local machine
4. Type ***interface vlan 1***
5. Type ***ip address*** 10.1.1.1/24
6. Type ***commit -*** to write changes to db
7. Type ***write mem -*** to save to startup config
8. Type ***exit***



4.3 First Login – WiNG Web Interface

After the IP address has beenset in the command line interface.The New system shall be manageable via the web interface.

1. Connect to the NX system via IP web browser.
2. Connect to the NX platform via the following GUI. ***https://ipaddress/***
3. Login as ***admin*** with password previously created in the console set.

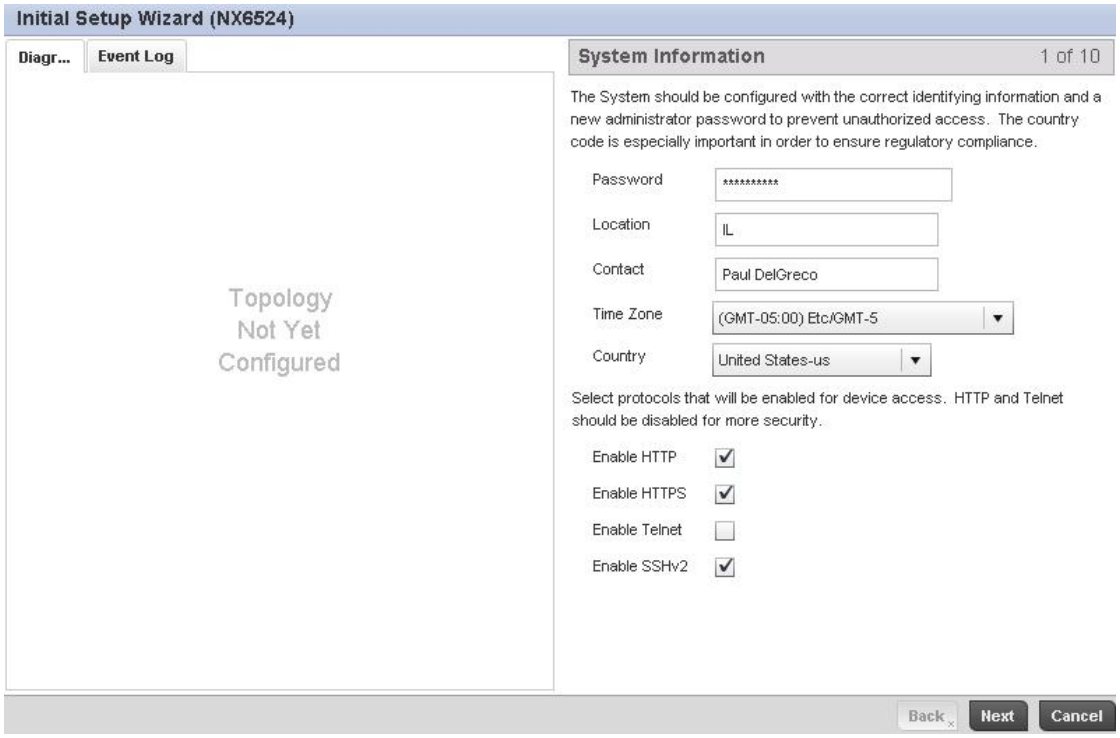
4.4 Initial Setup Wizard

Once you login to the URC platform via the web browser for the first time you will be prompted to use the initial setup wizard to help pre-configure the WING and network applications to be used on this installation.

1. Select Start Wizard

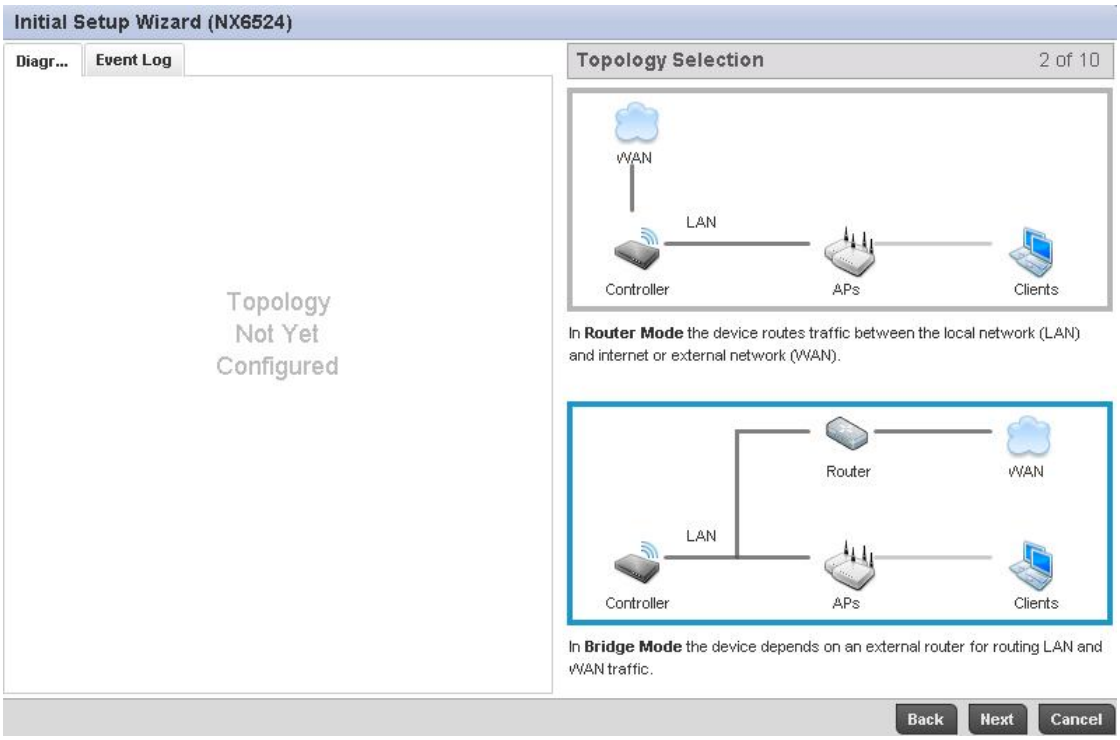
Initial Setup Wizard (NX6524)
An initial setup wizard is available to aid in configuring a simple WLAN deployment. The wizard will guide configuration of the following features:
1. Access Point Type
2. Bridge or Router Operation
3. LAN Configuration
4. Radio Mapping
5. WAN Configuration
6. Wireless LAN Configuration
7. Location, Country, and Time Zone
Would you like to use the wizard?
Start Wizard
Not Now
Never

2. Once Logged in for the first time. Select Initial Setup Wizard (NX….)
3. Enter the ***System Information*** such as ***administrator password/location/Time Zone and Country Code Specification***
4. Next ***Select***
    - ✓ Enable HTTP
    - ✓ HTTPS
    - ✓ Telnet or SSH for remote management access.



5. Click ***Next***

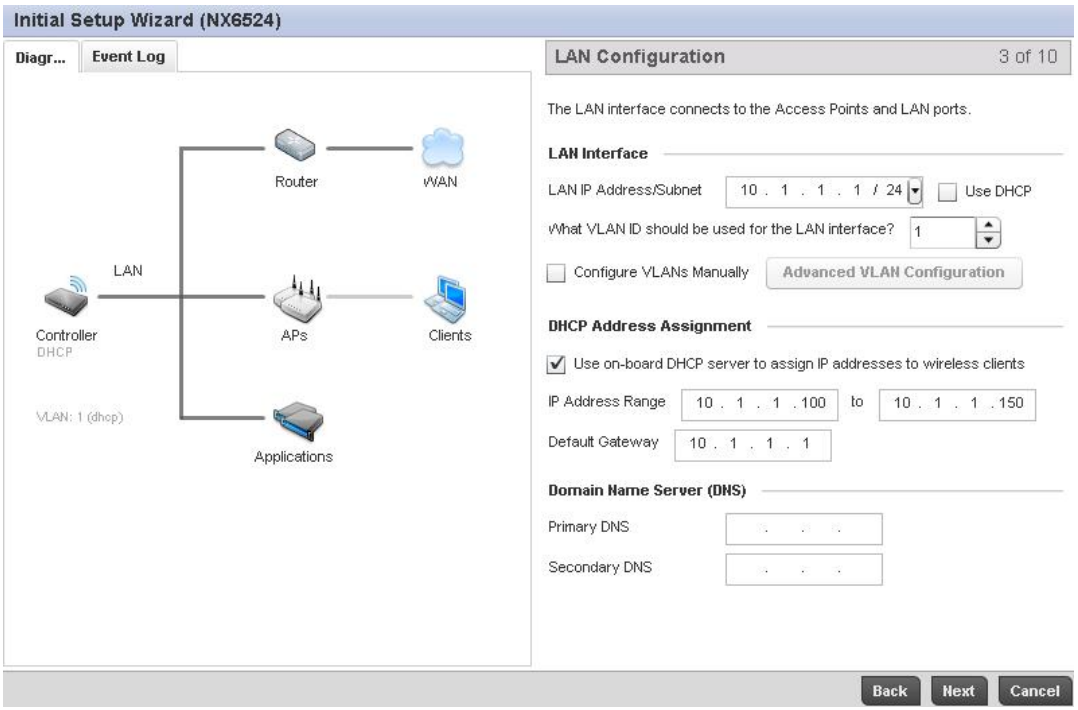
6. For the topology, Select ***Bridge Mode*** for Network functionality. Highlighted in blue



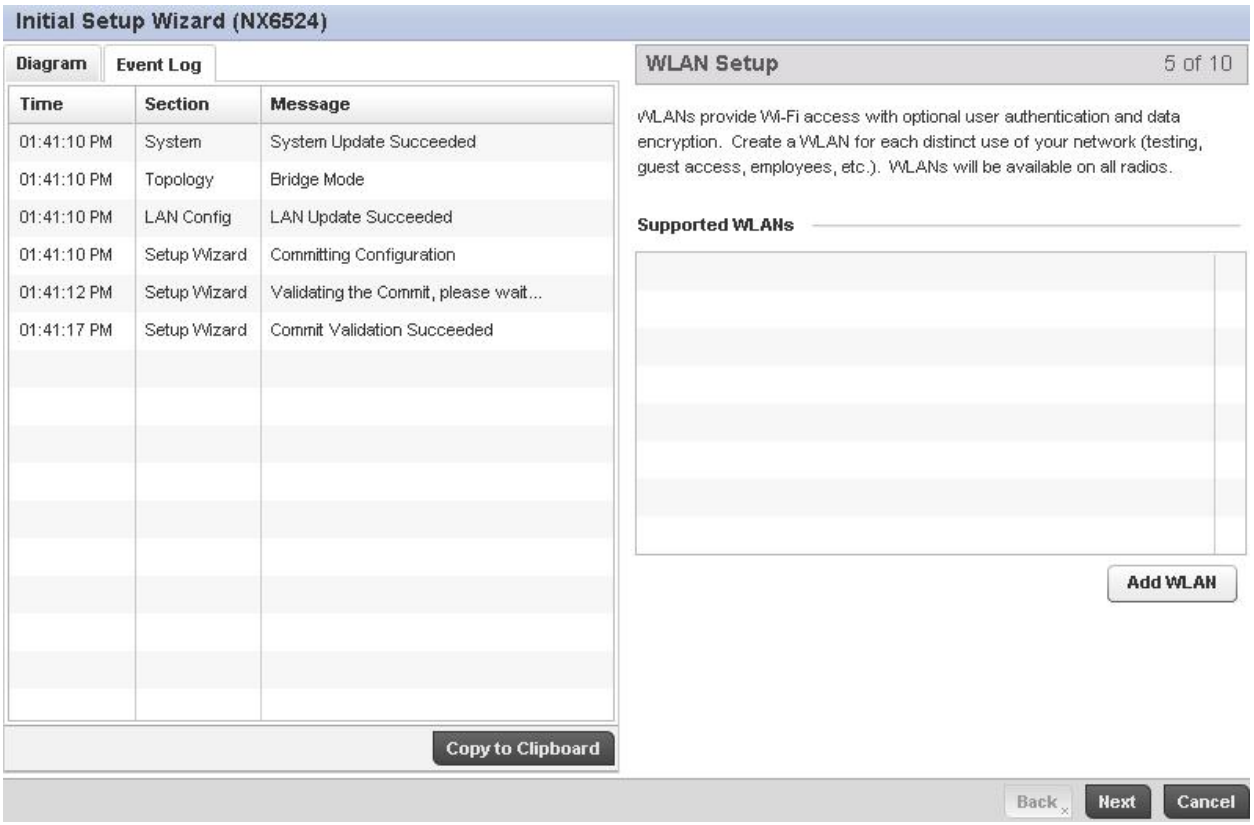
7. Then Click ***Next.***

8. Next Enter the ***LAN configuration*** for the NX system.

9. For this setup, the DHCP server will used and range applied as **10.1.1.100 to 10.1.1.150.**



10. The WAN interface will <u>not</u> be used in this setup. Select ***Next*** to go to next screen.

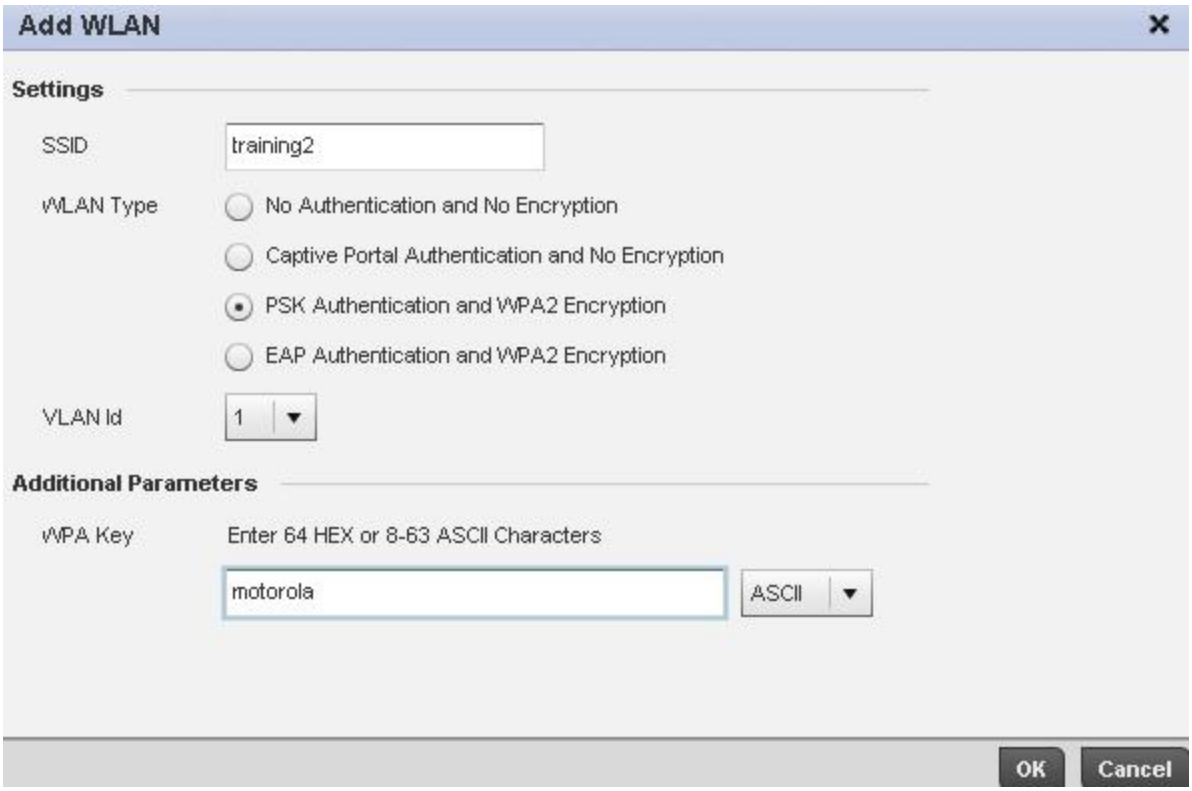


11. Select ***Add WLAN***.

12. Enter the WLAN credentials as desired.

    In this example it is set to:

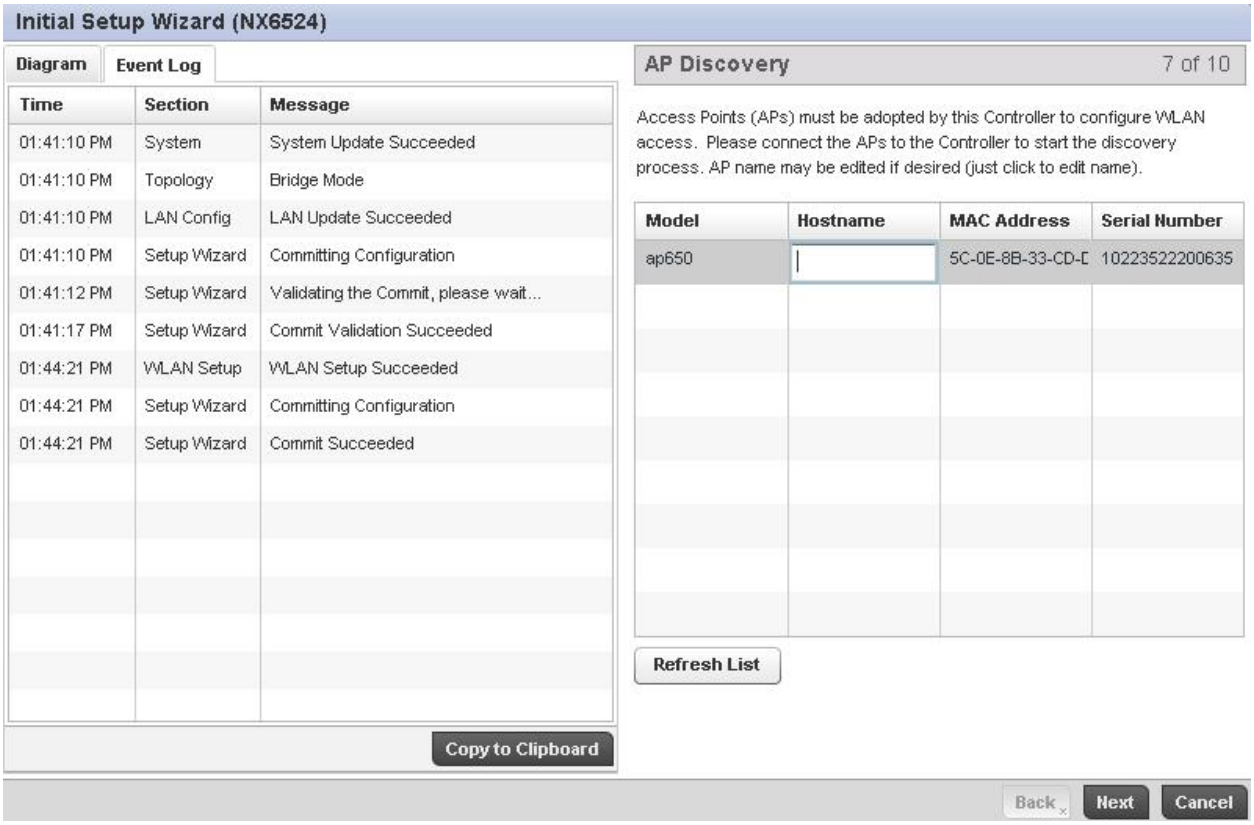
    - SSID = training2
    - WPA2 encryption with PSK Authentication
    - Passcode = motorola



13. Select ***OK***.

14. Enter *Next* to save the WLAN configuration.

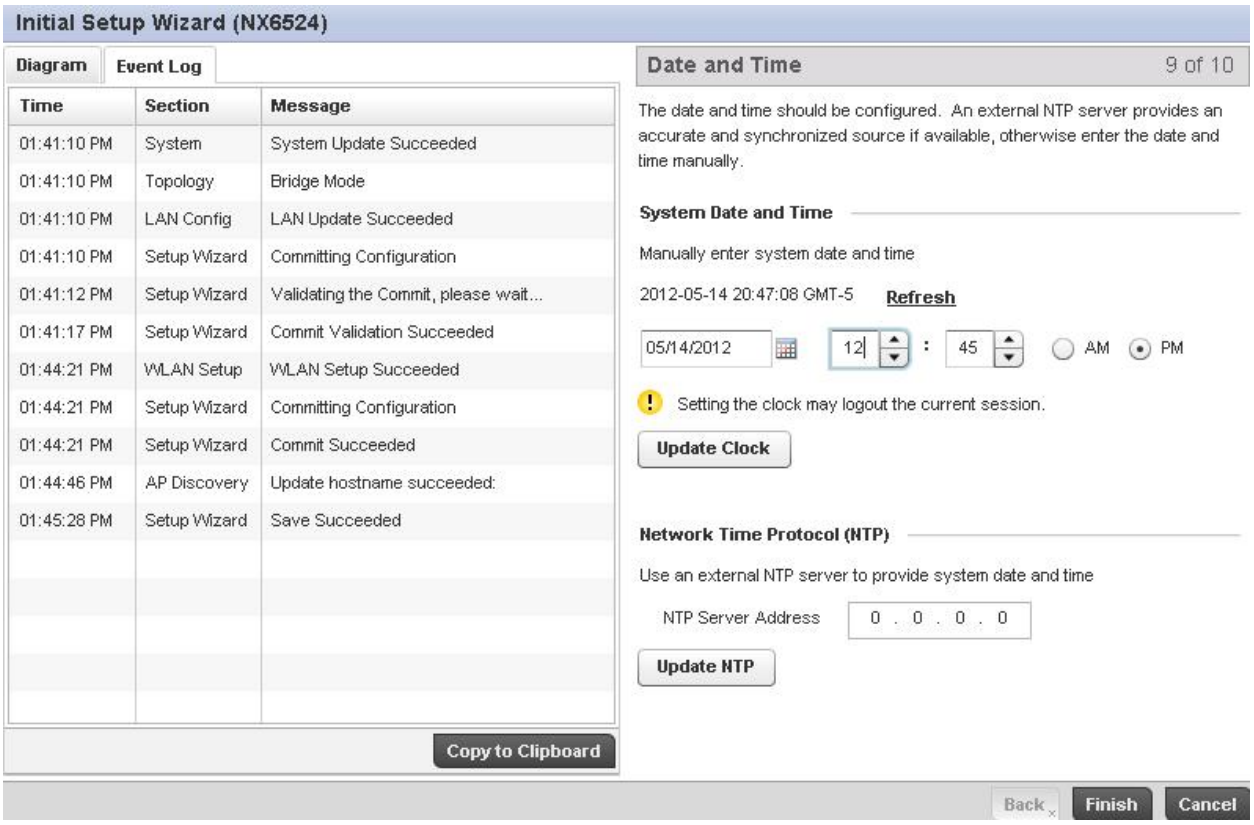
15. On the AP discpovery screen. Enter a ***hostname*** for the AP if desired. APs are auto discovery when pre-connected to the platform.



16. Select Next

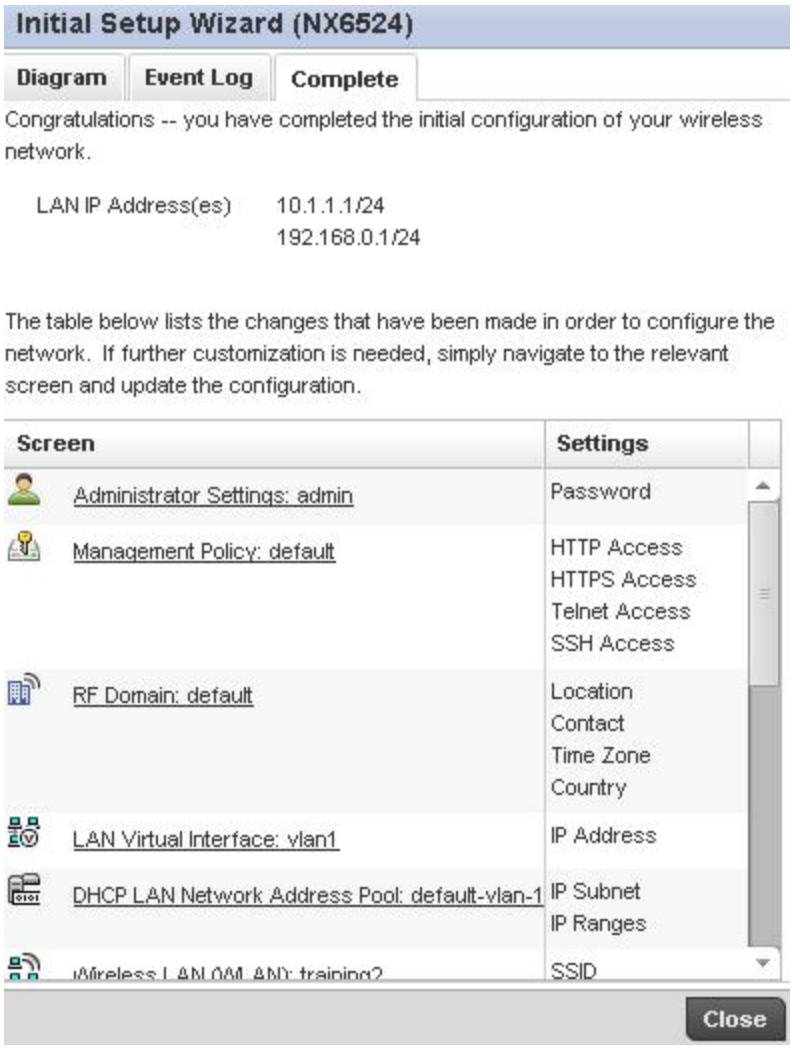
17. Enter the Date and Time details for the system.

18. Enter NTP configuration if used.


Initial Setup Wizard (NX6524)
Diagram
Event Log
Time
Section
Message
01:41:10 PM System System Update Succeeded
01:41:10 PM Topology Bridge Mode
01:41:10 PM LAN Config LAN Update Succeeded
01:41:10 PM Setup Wizard Committing Configuration
01:41:12 PM Setup Wizard Validating the Commit, please wait...
01:41:17 PM Setup Wizard Commit Validation Succeeded
01:44:21 PM WLAN Setup WLAN Setup Succeeded
01:44:21 PM Setup Wizard Committing Configuration
01:44:21 PM Setup Wizard Commit Succeeded
01:44:46 PM AP Discovery Update hostname succeeded:
01:45:28 PM Setup Wizard Save Succeeded
Copy to Clipboard
Date and Time
9 of 10
The date and time should be configured. An external NTP server provides an accurate and synchronized source if available, otherwise enter the date and time manually.
System Date and Time
Manually enter system date and time
2012-05-14 20:47:08 GMT-5
Refresh
05/14/2012
12
45
AM
PM
Setting the clock may logout the current session.
Update Clock
Network Time Protocol (NTP)
Use an external NTP server to provide system date and time
NTP Server Address
0 . 0 . 0 . 0
Update NTP
Back
Finish
Cancel

19. Click ***Finish*** to save configuration

20. Review your configuration and edit as desired.



21. This sets up the initial configuration for the WLAN and network parameters.

4.5 DHCP Server Setup

In order to utilize the DHCP services on the NX platform. The following steps will be needed to be accomplished on the DHCP server configuration on the URC NX platform. The following steps are sample configuration performed in lab.

1. Login to the CLI interface via putty or terminal emulation program.

2. Login as ***admin/password*** previously set in the initial setup of the system.

3. Enter the following commands to determine the MAC address of the URC PBX services and TEAM Mobile Extensions (PTT) service.

For TEAM URC (PBX) = show virtual-machine configuration team-centro

For TEAM Mobile Extensions (PTT) = show virtual configuration team-vowlan

4. Next using a web browser, Login to the WING GUI as admin/password.

5. To setup DHCP configuration. Select the ***1– Configuration / 2- Services / 3 - DHCP Server Policy***

6. Next select the **default-vlan-1** DHCP Pool.

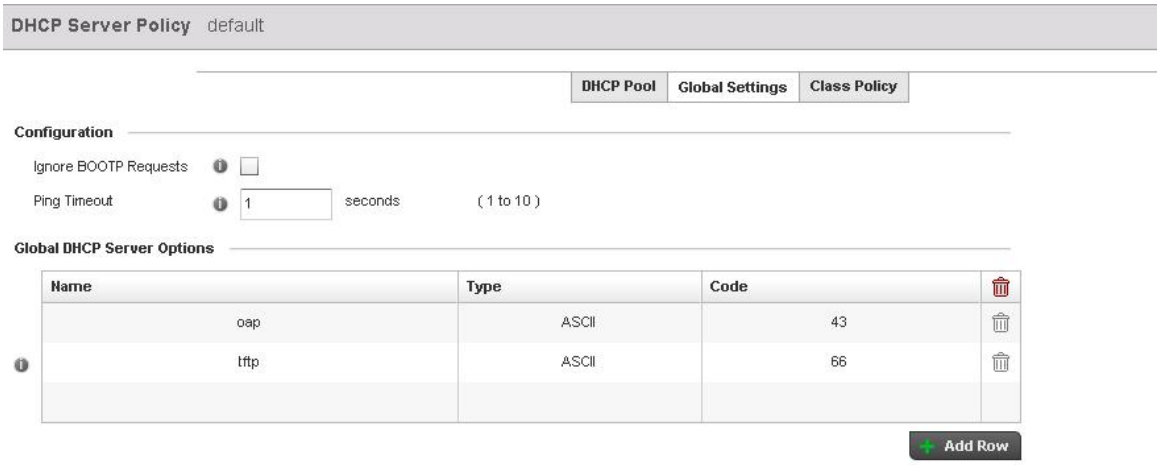
7. Click the ***Global Settings*** tab on the top menu to enter additional DHCP options. In this example the tftp (option 66) and the oap (option 43) will be used.

   The TFTP service will be used for IP desksets to download binary files and the oap option will be used for wireless handset binaries/configuration downloads.

8. Select ***ADD ROW*** to enter DHCP option details.

9. Next enter the following details for TFTP option 66 and OAP option 43:

Name	Type	Code
tftp	ascii	66
oap	ascii	43

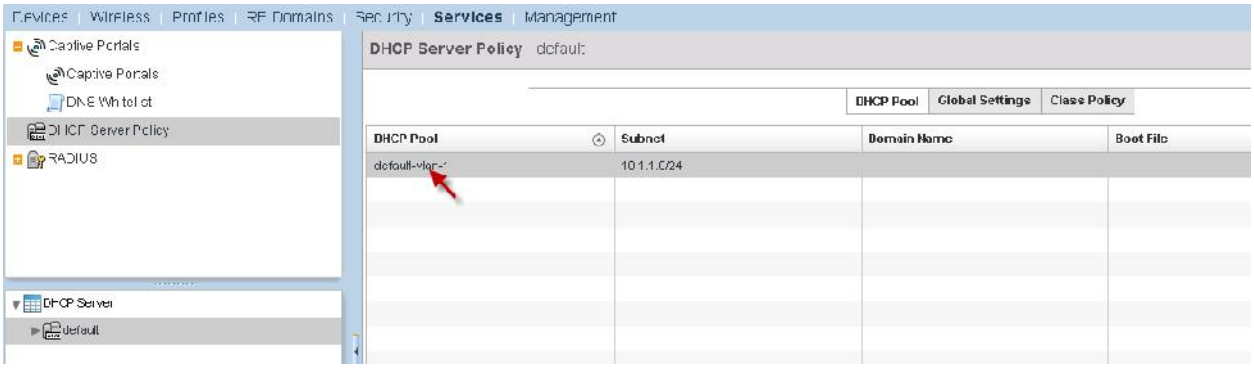


10. Click ***Add Row*** for additional DHCP options required.

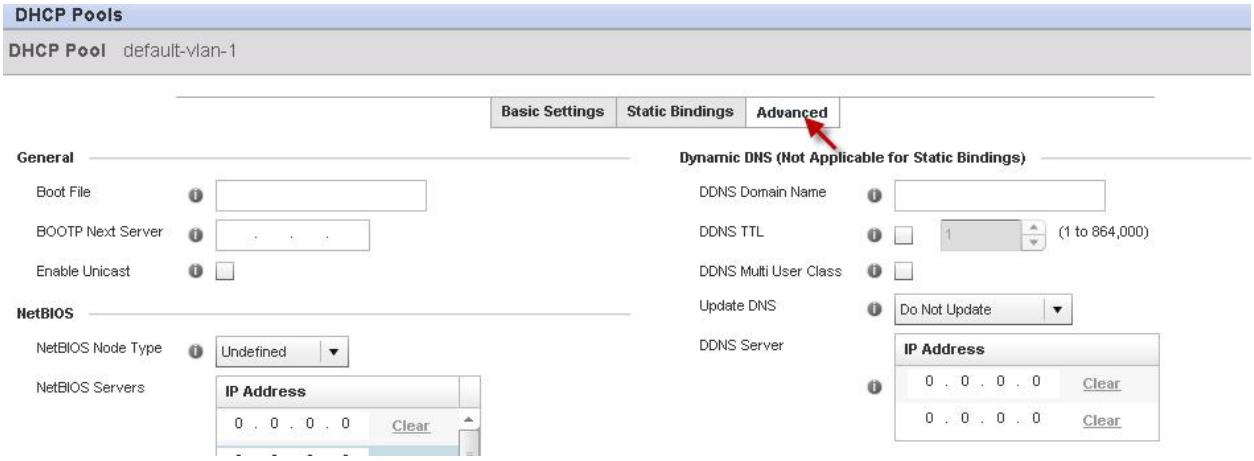
11. Select ***OK*** to save configurations

12. Always select ***Commit and Save*** to write configurations to the startup configuration.

13. Under ***DHCP Server Policy,*** select the configured DHCP server policy being used in the setup by double clicking the policy.



14. Next select the ***Advanced Settings*** tab.



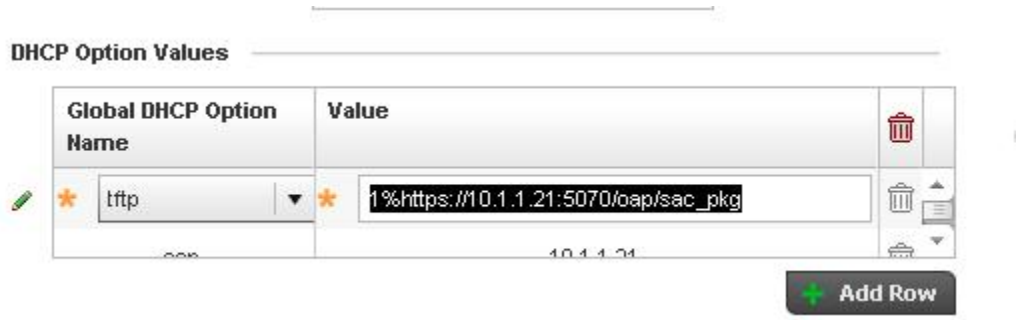
15. In the DHCP options values, select Add Row to add the option 43 and option 66 in this specific subnet configuration.

    An example of OAP option 43 string value =

    1%https://10.1.1.21:5070/oap/sac_pkg - IP address of URC PBX application

    An example of TFTP option 66 string value =

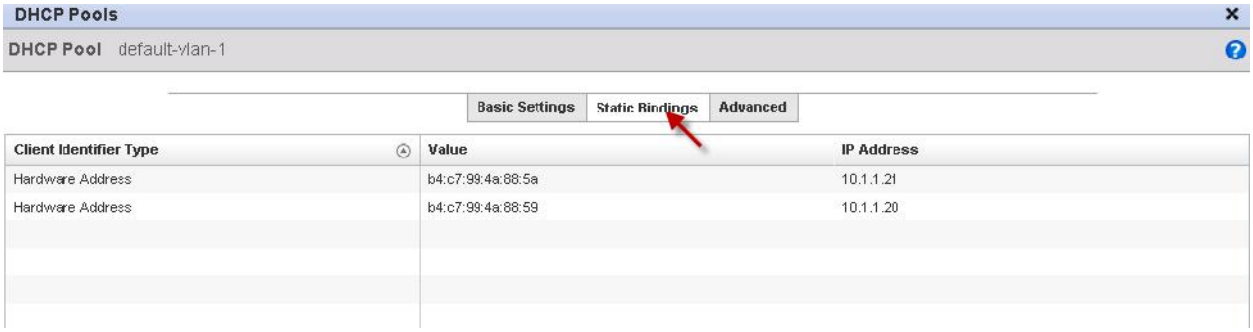
    10.1.1.21 - IP Address of URC PBX Application



16. Next Select ***Static Bindings*** tab to set a reserved static IP address for the URC application and TEAM VoWLAN service with their appropriate dedicated MAC addresses

17. Then select ***ADD*** to Enter the hardware address for the **URC server**. Previously obtained in CLI access.

18. Next Select ***ADD*** to Enter the **TEAM VoWLAN** hardware address. Previously obtained in CLI access.



19. After Configuration is complete, select ***Commit and Save*** to write changes to memory for future restarts.

This concludes the setup of your DHCP server.

4.6 Installing FXO/FXS Gateway Board onto NX platform expansion card slot

The NX platform supports up to 4 add-on modules for such functions as FXO, FXS as well as T1/E1 Gateway termination boards for PSTN connection to the URC system.

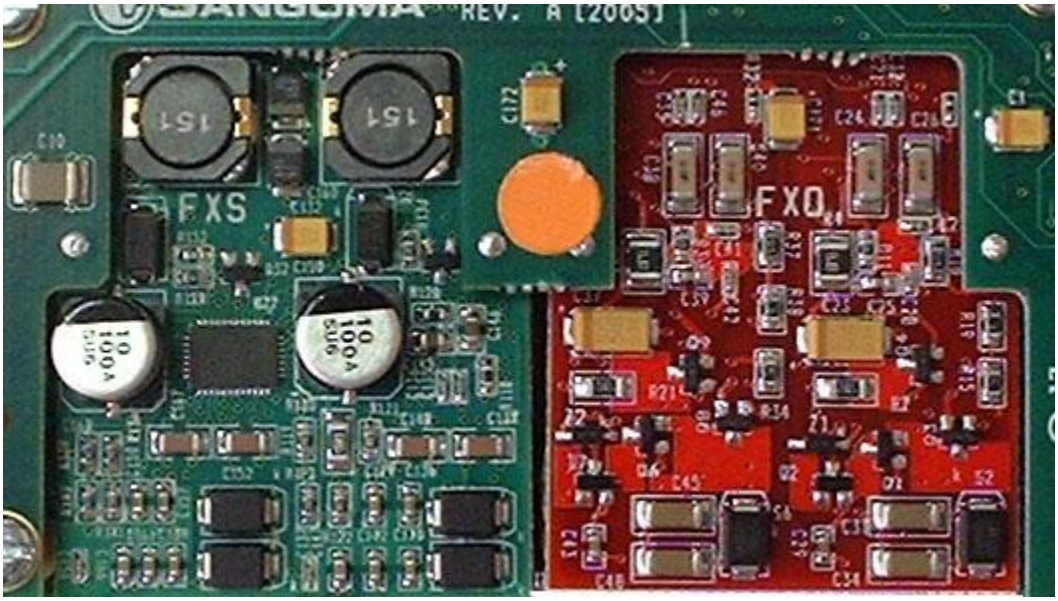
The Motorola URC system supports internal Sangoma gateway boards to be installed internally into the NX chassis 4 port expansion slots. The following example configuration will be based on istallation of Sangoma FXO/FXS A200 series combination gateway boards. The configuration will include 2 FXS (stations) and 2 FXO (trunks) ports for use.

To install an expansion module:

1. Remove the expansion card cover for the expansion module bay.
2. Insert the expansion module into the expansion module bay.
3. Tighten the retention screws on the sides of the expansion module. The following figure represents the installation of the expansion module for the NX-4524 and NX-6524 models:

4.6.1 Sangoma A200 - FXO FXS Module Installation in NX Chassis

Slide the modules into the main board until you feel the modules click home properly. You should be able to read the designation **FXO** or **FXS** on the outside of the card (Remora) after installation.



NB: If you should make a mistake and install the modules the wrong way round, the modules will not work, but they will not be damaged.

Notes on Sangoma Boards:

The Sangoma A200 card with **FXS modules**, or A200 cards connected via backplane bus, need much more power than a regular PCI bus can provide. In order for an FXS module or multiple cards to work properly, a 4 pin computer power cable must be plugged in to the main card itself. This is the same power cable, male connector, that one would connect to a hard driver or a cdrom. Any regular computer power supply should provide more than enough power, however for best and most reliable performance, bigger the power supply the better (eg: 450W)

A SINGLE A200 with no Remora and only FXO modules (i.e.pnly 4 ports FXO) does not need to be connected to computer power supply! All other combinations DO, including any FXO combination that has more than 4 FXO ports!
The external power cable should be used by default on all systems, if possible.

FXO modules are RED in color
FXS modules are GREEN in color
An A200 Analog card can be outfitted with any combination of the two. All FXO or FXS or one

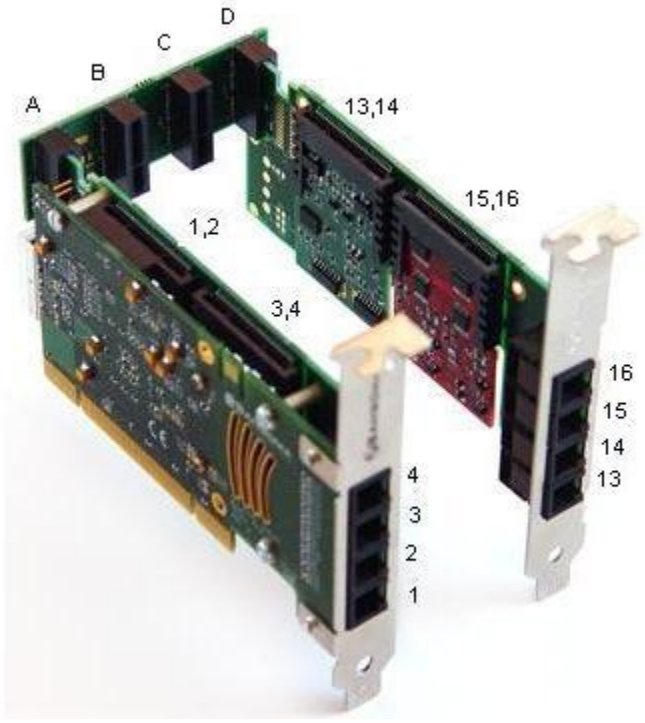
of each. Furthermore, each RJ4 pin port is either mapped to FXO or FXS module depending on the physical location of the FXO/FXS module on the card.

FXO/FXS Modules have RED/GREEN face and BLUE back. This way the installation of FXO/FSX modules will be simplified. The analog port will glow RED or GREEN depending on which type of modules is installed.

4.6.2 FXO/FXS Module and Ports Mapping

The bottom port is port 1 and top port is port 4.

The module closest to the 12v molex connector corresponds to ports 1 and 2 and the module closest to the pci brackets corresponds to ports 3 and 4. See diagram below.



4.7 Assigning FXO/FXS Gateway board to the TEAM URC (Centro)

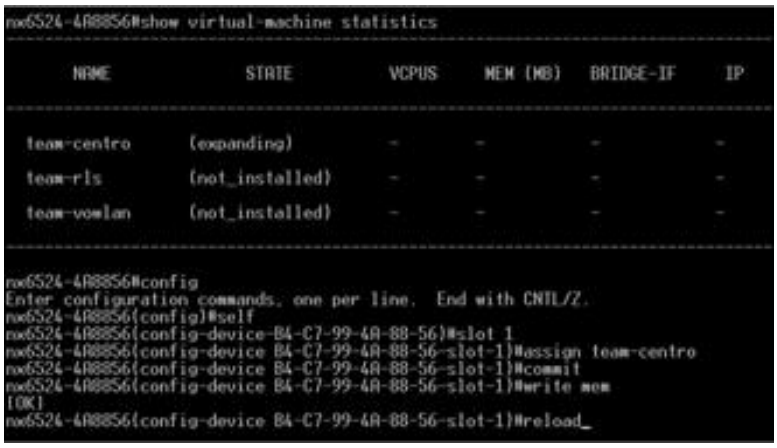
Note: You will also notice that code name Centro is used in many aspectrs of naming. This is the same as the URC server.

1. Login to the NX chassis via the serial console port in the front of the unit.

2. Login in as ***admin/password*** previously setup

3. To setup a Sangoma Analog GW board and assign it to the URC Application. Type the following commands.

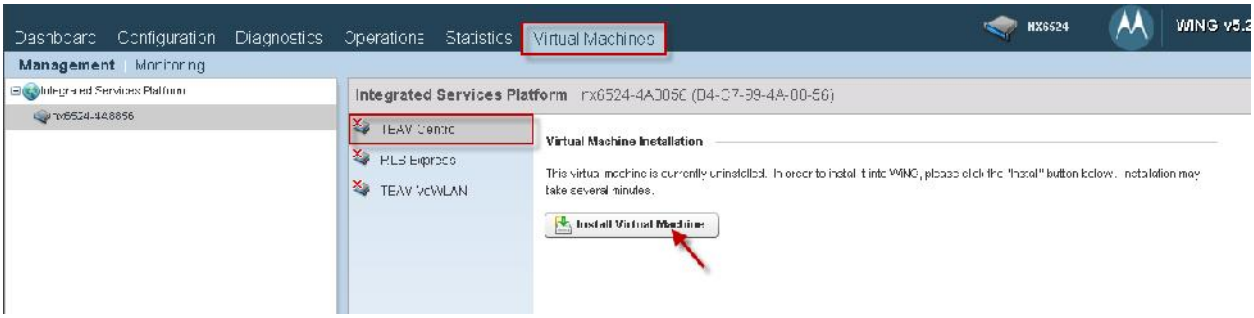
   Type ***en***
   Type ***config***
   Type ***self***
   Type ***slot 1***
   Type ***assign team-centro***
   Type ***commit***
   Type ***write mem***
   Type ***exit*** (get out of config mode)
   Type ***reload*** (restart server)



4.8 Installation of URC PBX Application

1. Go to ***Virtual Machines/TEAM Centro.***

2. Select ***Install Virtual Machine*** Button to install the URC PBX application.

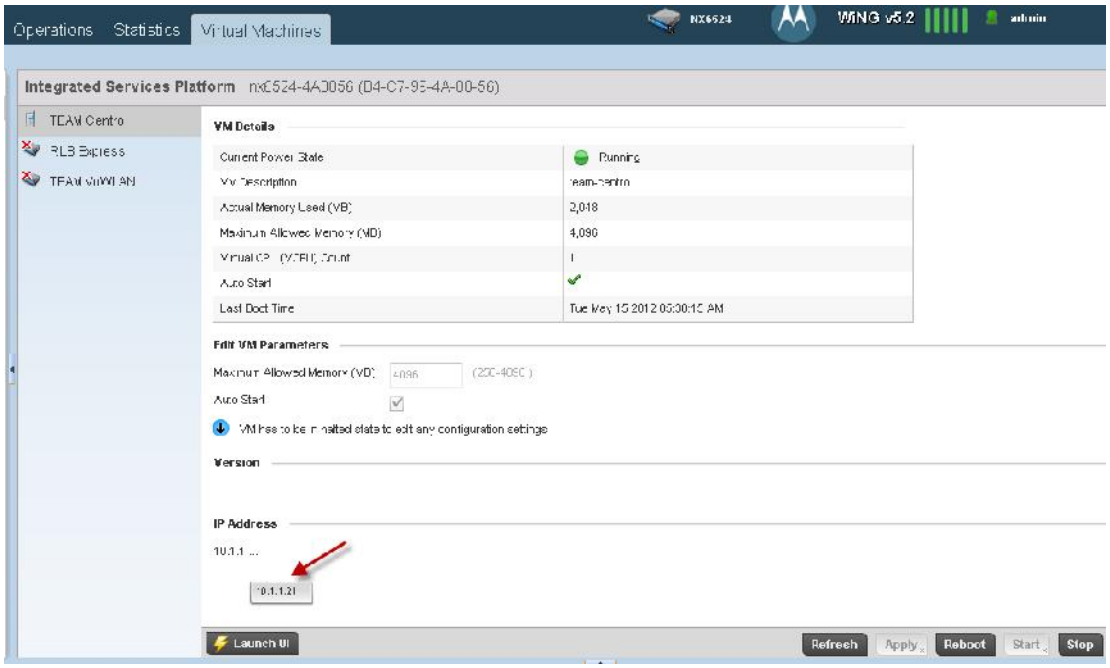


3. Select Install Virtual Machine when prompted.

Install Virtual Machine
This operation may take more than 5 minutes. Are you sure you want to Install?
Install Virtual Machine
Cancel

4. After the installation has completed, you will see the result VM details screen within WING platform.

5. Notice the IP address assigned to the process below.



4.9 Activate the URC Application (centro)

1. Navigate to **Virtual Machines/TEAM Centro**, select ***Launch UI.***
2. On the first launch, reset the admin password as desired.

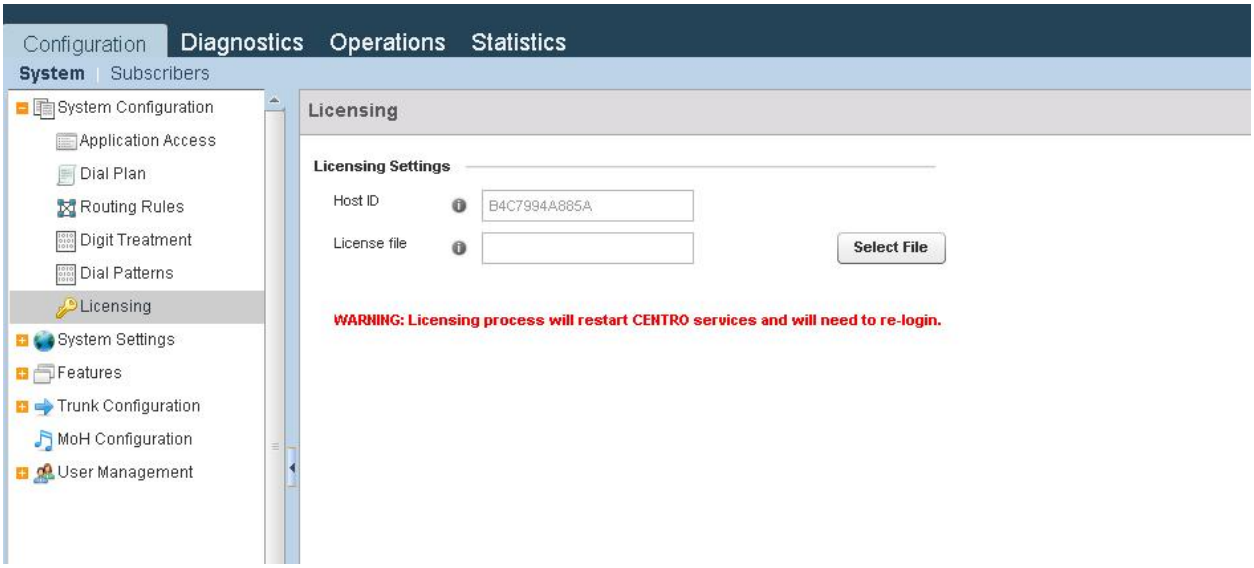
   The password must include a Capital letter as well as a number.

   Example = Password1.

Change password
Your system is currently using the factory default login credentials.
It is recommended that you change the default password to protect
from unauthorized network access.
New Password
Retype to Confirm
Apply
Logout

3. Next, Select ***Apply***.

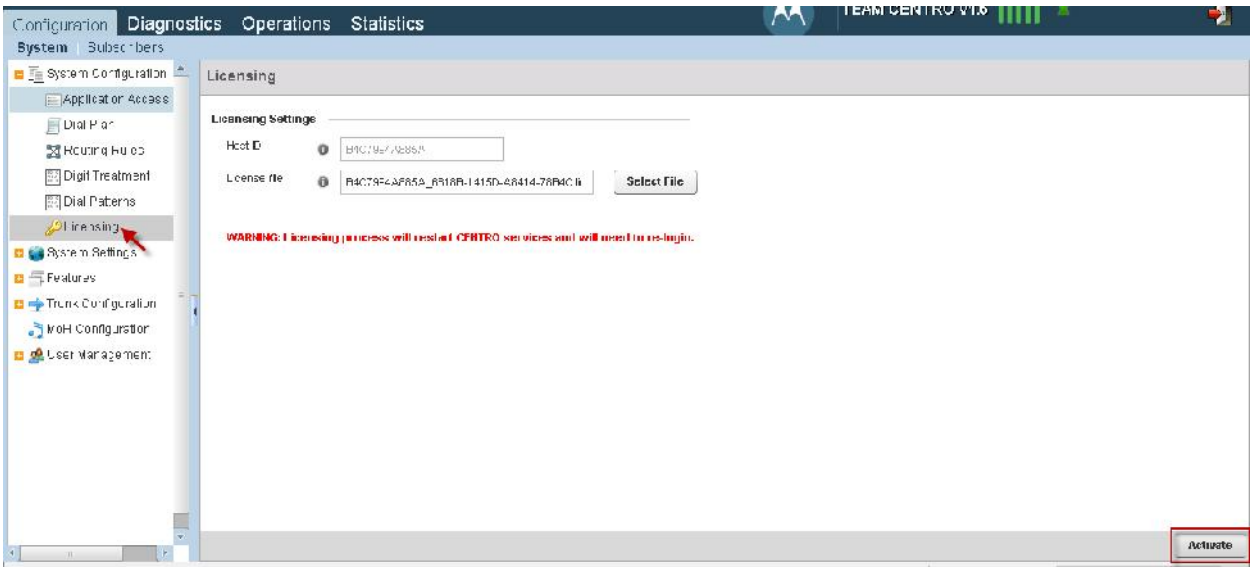
4. Select ***System Configuration/Licensing***



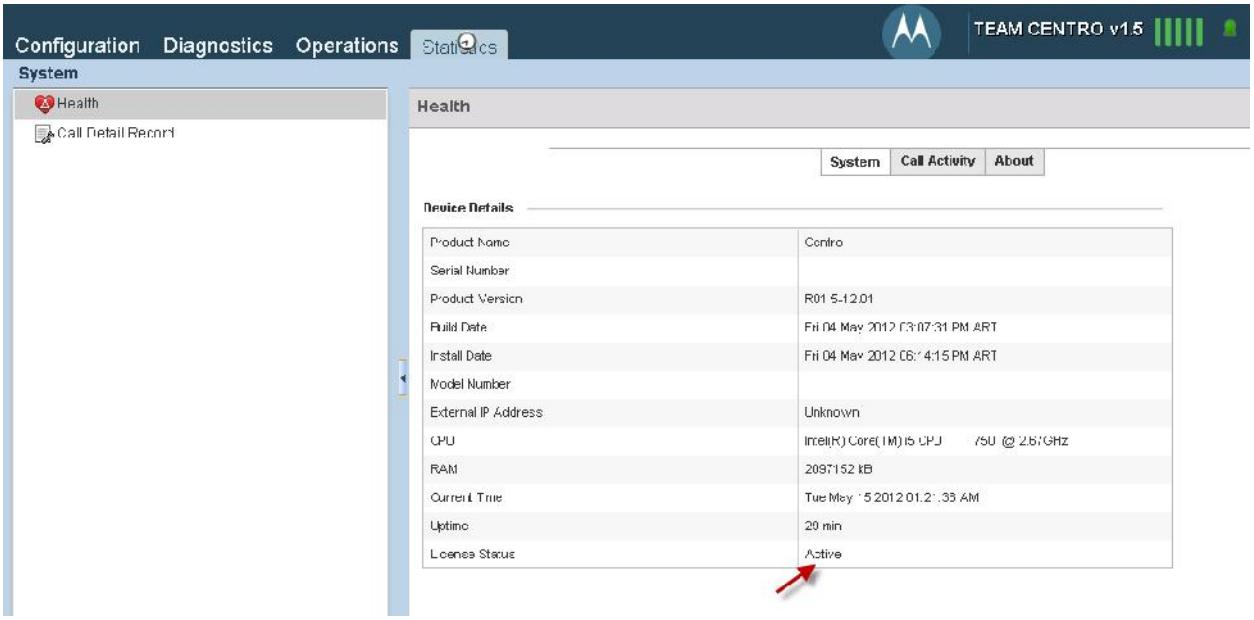
5. Select the appropriate License File to upload for activation. Then click Select File to browse to upload from PC.

   Note: License Obtained by Motorola support services or ordering services.

6. Click ***ACTIVATE*** on the bottom left to activate the URC application.



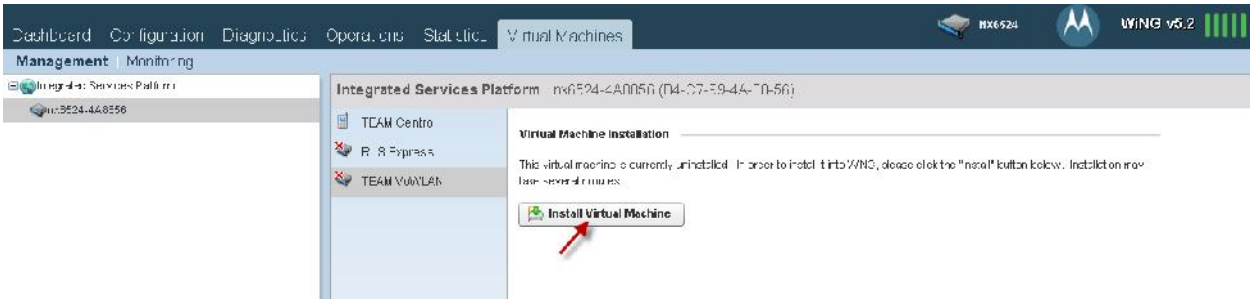
7. Once Activated, navigate to the ***Statistics Tab*** on top menu, then click on the Health and System Tab to show that the URC is in **activate state**.



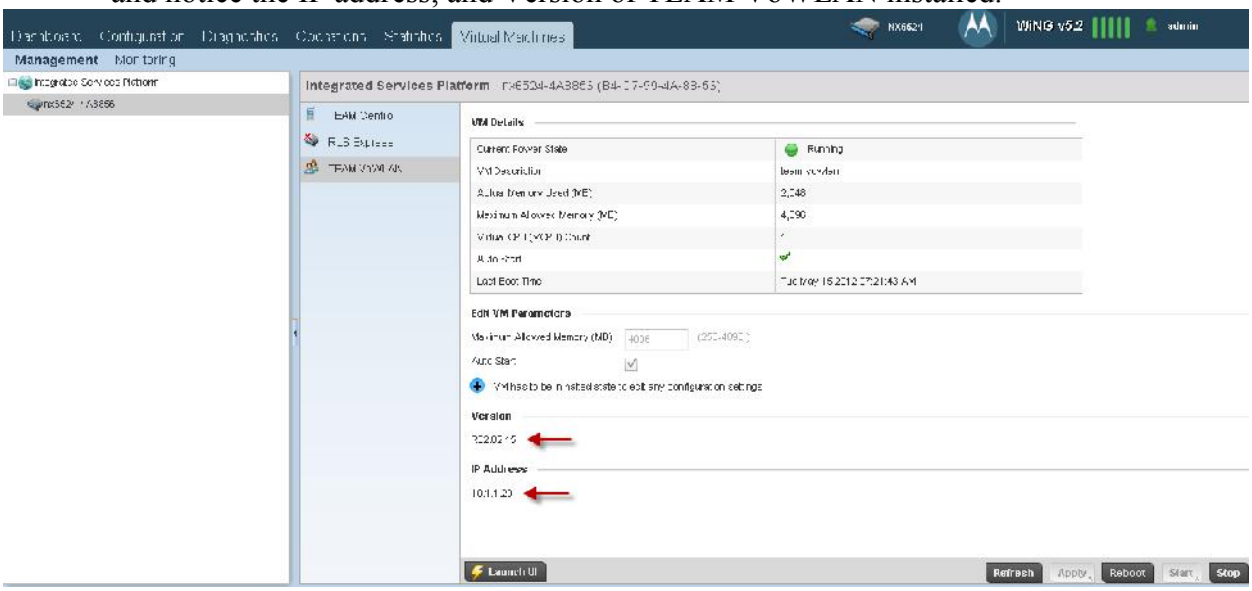
4.10 TEAM VoWLAN PTT Service Installation Procedure

1. On the ***Virtual Machines Tab***, click on the ***nx65xx menu*** under ***Management.***

2. Select the TEAM VoWLAN Service and then select Install Virtual Machine button to install the PTT services.



3. Once the TEAM VoWLAN service is installed. Make sure the services are operational and notice the IP address, and Version of TEAM VoWLAN installed.



4.11 TEAM VoWLAN License Activation

1. The Launch UI will not work until the TEAM VoWLAN application has been activated. The launch UI brings up the Web UI to TEAM VoWLAN.

2. For the first time activation purposes of the TEAM VoWLAN application the WEBUI needs to be manually entered into the browser to activate the license.

Sample = http:// ***TEAM VoWLAN IP Address***/webui/WSMApp.html

3. Once the TEAM VoWLAN Web UI is launched properly, the login screen will appear.

   The default user account for TEAM VoWLAN will be:

   userID = admin
   password = motorola

4. It will then ask you to change the password for the admin account.

5. Next change the admin password.

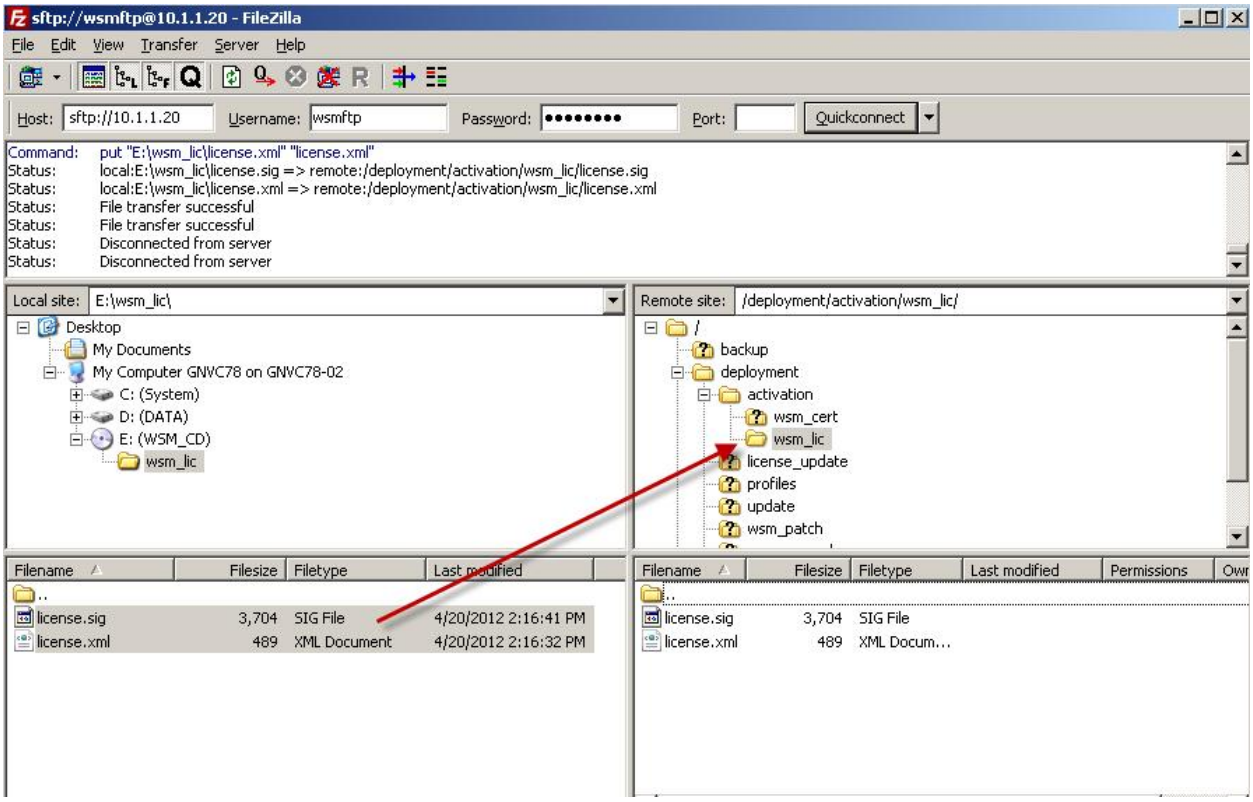
   Password criteria must include a Capital Letter and at least one Number

   For example = Password1

4.12 TEAM VoWLAN PTT Server Activate License – FTP to WSM system

1. Use an FTP application or client to upload the TEAM VoWLAN PTT server license to the NX/URC platform.
2. Login to the TEAM VoWLAN/WSM server IP address previously assigned

   Using secure FTPs
   IP Address of TEAM VoWLAN
   userID =ftpuser
   password = ind3adn

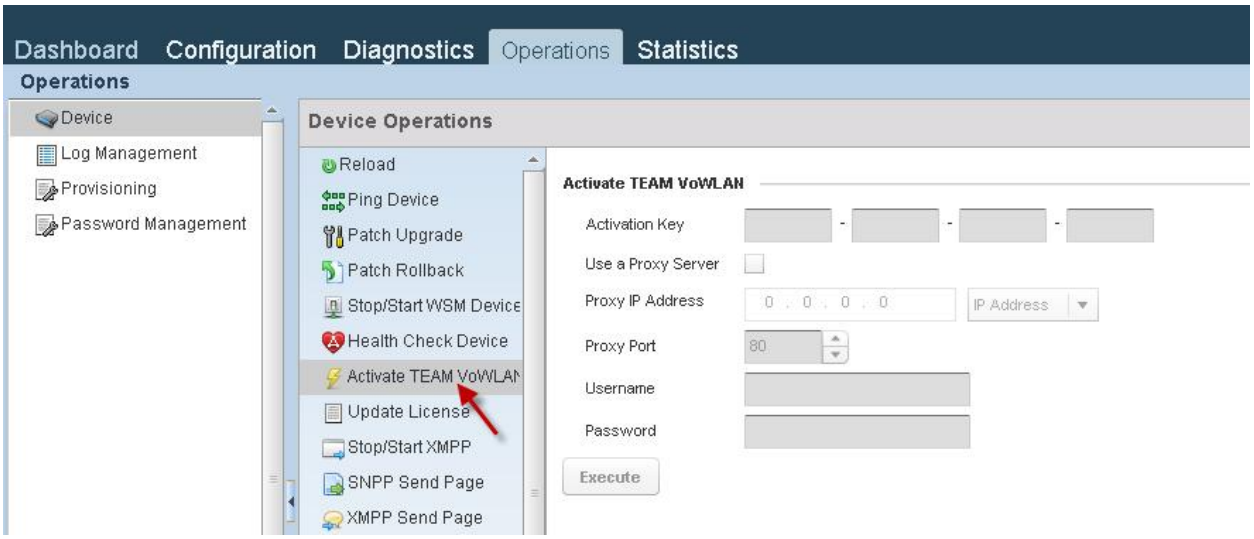


3. FTP the license.sig and license.xml file into the following directory on TEAM VoWLAN Server:

   /usr/deployment/activation/wsm_lic directory

4. Once the TEAM VoWLAN application is activated, next navigate from a web browser in the TEAM VoWLAN Server GUI, to the Activate TEAM VoWLAN screen.

Located within the ***Operations Tab/Device/Activate TEAM VoWLAN.***



5. Enter the appropriate TEAM VoWLAN activation key information as provided by your license file.

6. Click Execute to activate the license. The Activation = Done should be applied if correct license file

4.13 TEAM VoWLAN PTT Configuration

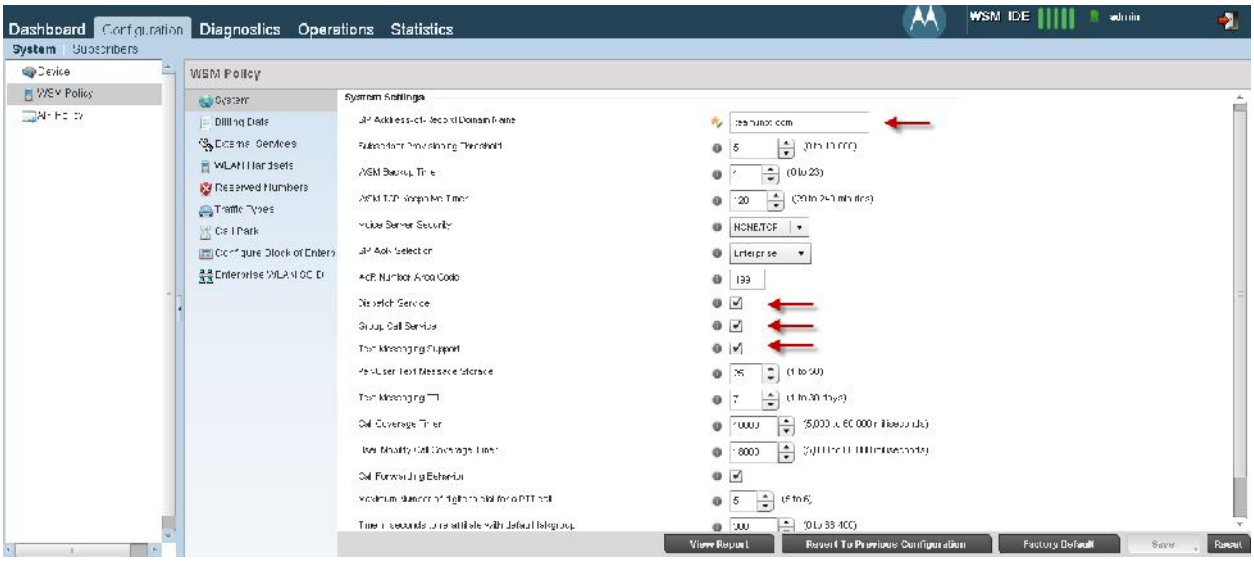
1. In the TEAM VoWLAN application. Some basic configuration is required to setup the WSM environment.

2. Login as ***admin***, navigate to the ***Configuration Tab*** and Select ***WSM Policy*** to configure the system setup.

3. Then select ***System*** on the Configuration Menu.

4. Enter the following parameters as minimum configuration for initial setup.

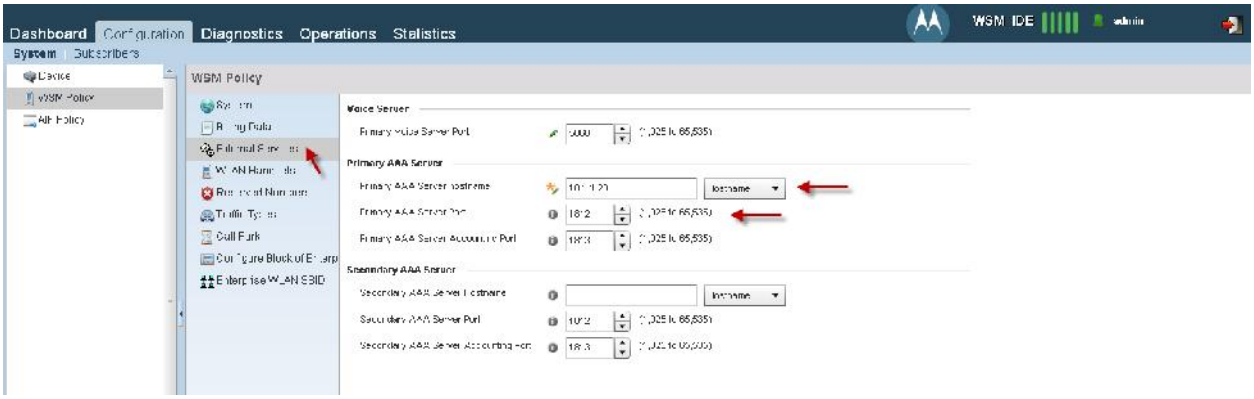
   SIP Address of Record Domain Name: ***team.mot.com***
   Dispatch Service: ***yes***
   Group Call Service: ***yes***
   Text Messaging: ***yes***



5. Next select the External Services screen.

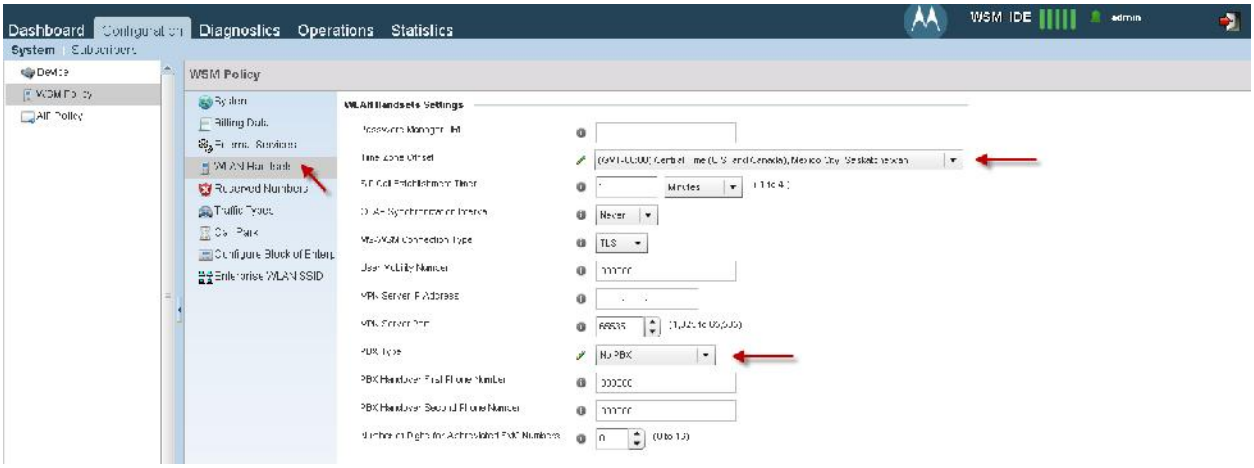
6. Enter the following parameters as minimum initial configuration.

   Primary AAA Server hostname: 10.1.1.20 (WSM IP Address)
   Primary AAA Server Port: 1812 (default)



7. Navigate to the WLAN Handsets screen on the menu. Enter the following parameters for initial configuration:

   Time Zone: set to your local timezone
   PBX Type: "No PBX" (when using TEAM URC internal PBX)



8. **Add TEAM VoWLAN Subscribers for PTT services.** This will be done for wireless handsets that require PTT services for each subscriber. This will not be applied for IP desksets.

9. In the TEAM VoWLAN webUI, Navigate to the ***Configuration/Subscribers*** tab

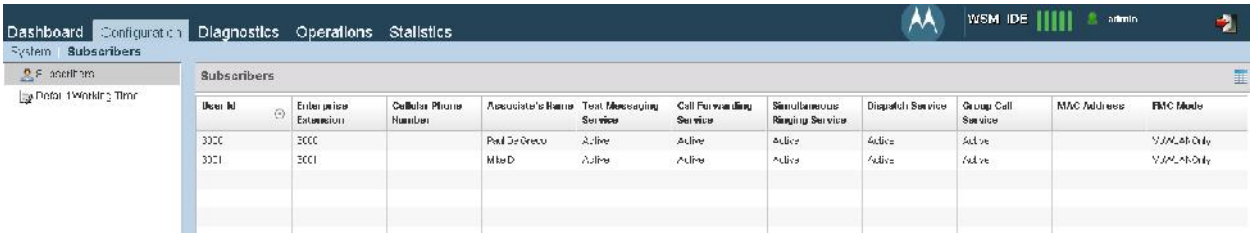
10. Click on "Add" on the lower right hand corner to add PTT subscribers.

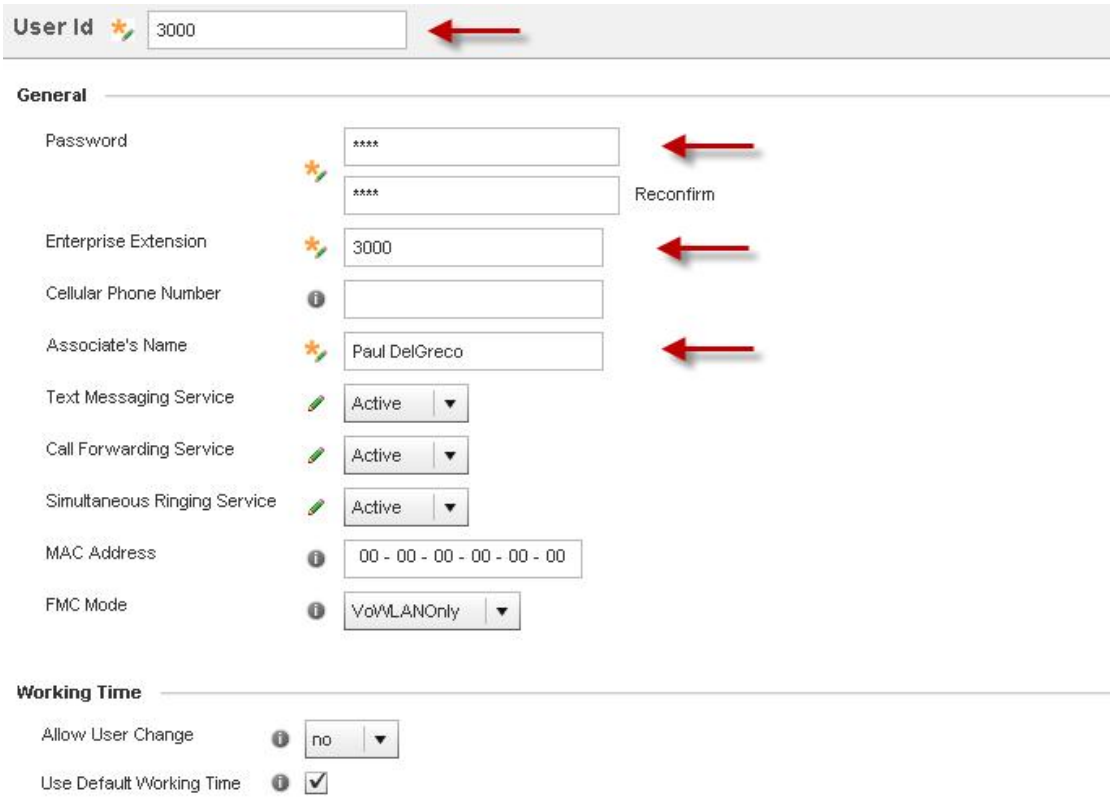
11. Set the following subscriber parameters to setup mobile extensions for PTT TEAM VoWLAN services. This is required for EWP and Motorola Handsets that require PTT services.

User ID:	3000
Password:	pass
Enterprise Extension:	3000
Associates Name:	xxxxxxxxxx
Text Messaging Service	Active
Call Forwarding Service	Active
Sim Ringing Service	Active
FMC Mode	VoWLAN Mode (wifi only device)
Dispatch Service	Active
Emergency Call Service	Active
Group Call Service	Active
Talk Groups:	1

12. Once configured, click OK to save your subscriber configuration.

The subscribers that you created will now be listed under the Configuration/Subscribers list.




User Id
3000
General
Password
****
****
Reconfirm
Enterprise Extension
3000
Cellular Phone Number
Associate's Name
Paul DelGreco
Text Messaging Service
Active
Call Forwarding Service
Active
Simultaneous Ringing Service
Active
MAC Address
00 - 00 - 00 - 00 - 00 - 00
FMC Mode
VoWLANOnly
Working Time
Allow User Change
no
Use Default Working Time

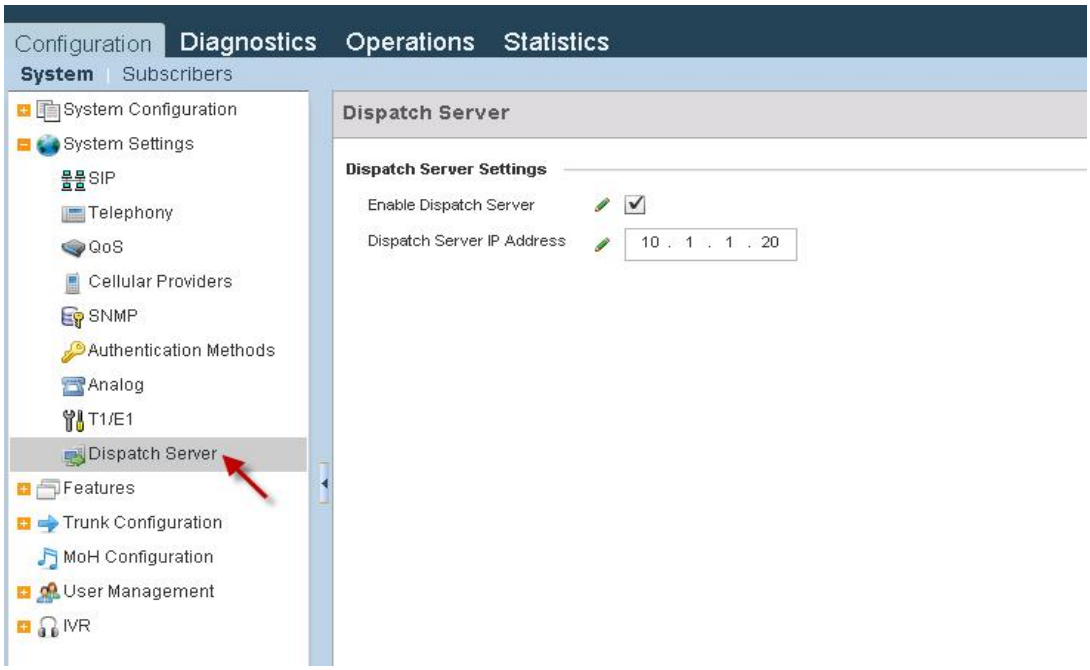
5.0 TEAM URC PBX Configuration

1. First setup the **Dispatch Server**. Navigate to the ***Configuration/System Settings/Dispatch Server*** tab on the left side configuration menu.

2. Select ***Enable Dispatch Server***

3. Enter ***Dispatch Server IP Address***: 10.1.1.20 in this case (IP of TEAM VoWLAN server)

4. Reboot TEAM URC Server to enable Dispatch server from TEAM VoWLAN server to operate

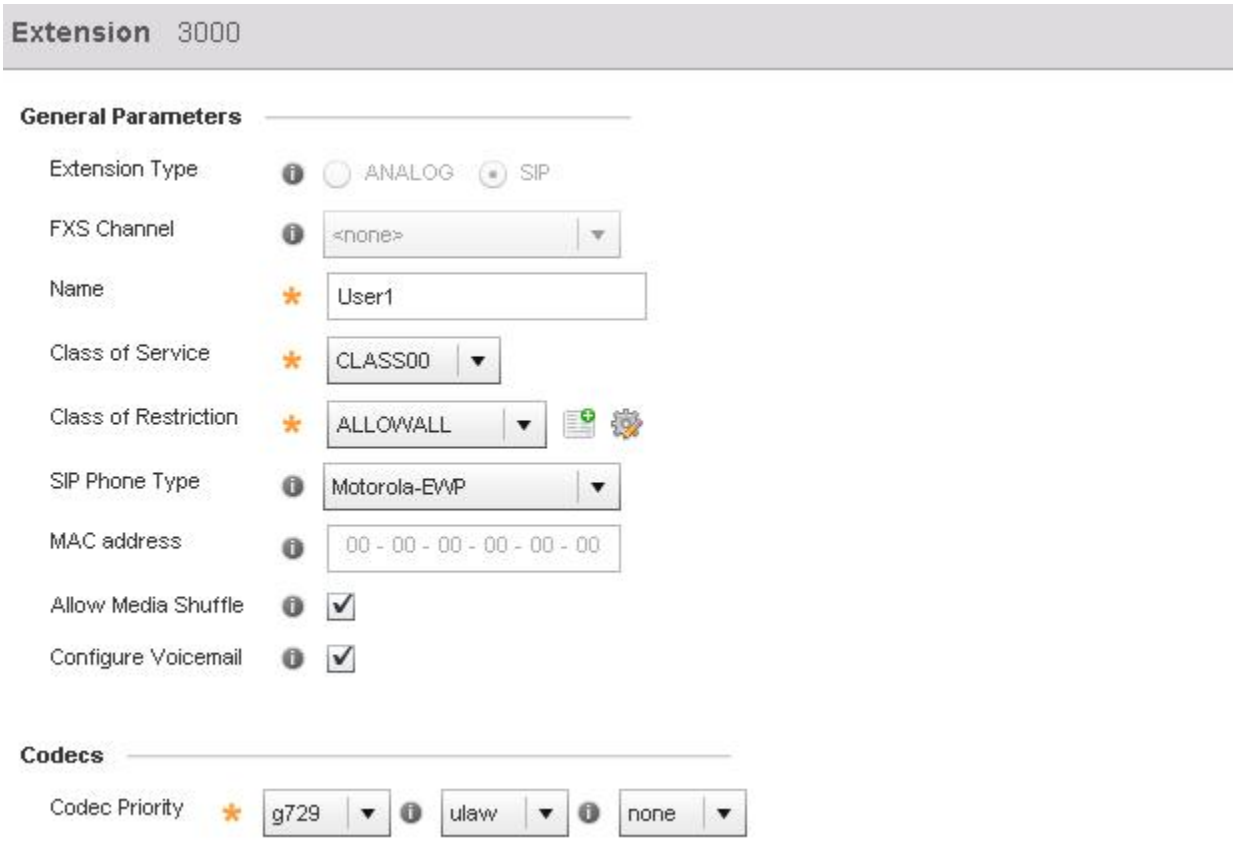


5.1 Add URC-EWP Handset Subscribers

1. For each subscriber within the URC system, a subscriber will need to be created. For each TEAM VoWLAN user as well as analog and SIP based desksets will need to be created.

2. Enter the following parameters for each user subscriber:

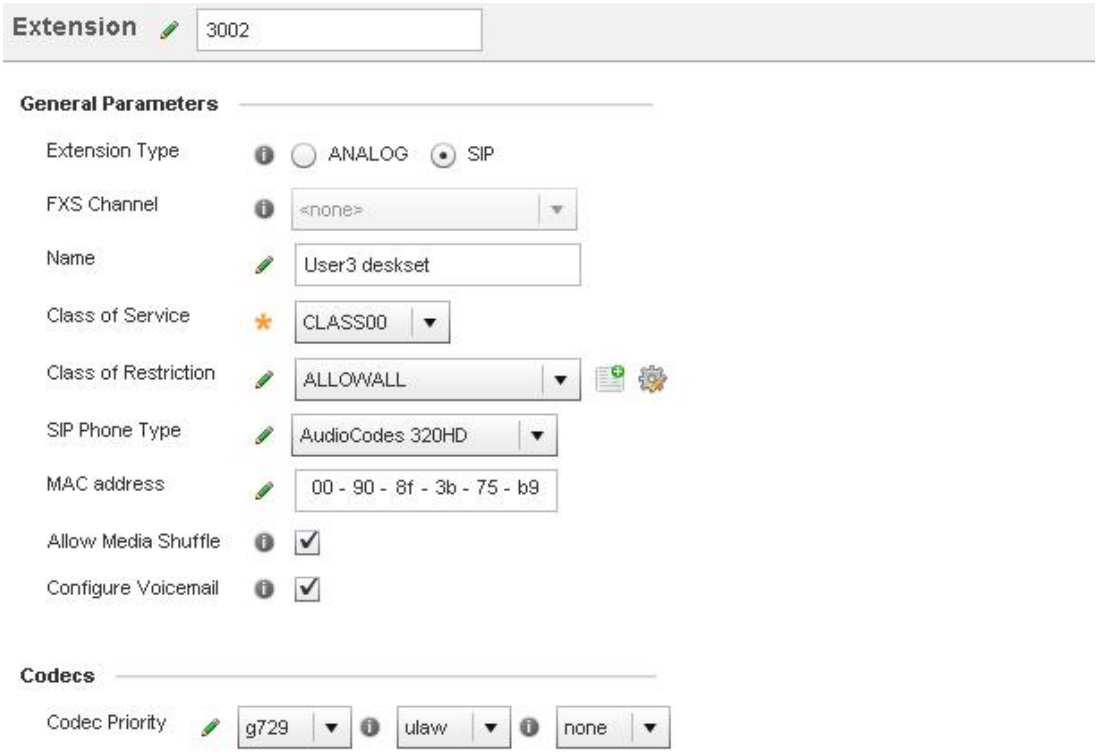
Extension:	***3500***
Extension Type:	***SIP***
Name:	***user name***
Class of Service:	***Class 00***
SIP Phone Type:	***Motorola EWP***
Codecs:	***G729, uLaw (G711)***
Register with Centro:	***yes***



5.2 Setting Up Subscriber with Audio Codes Deskset 320HD

1. When adding an audio codes DeskSet, make sure the Phone type is the appropriate AudioCodes type, in this case Audio Codes 320HD model. Also make sure the MAC address is populated so that the set can download its configuration binaries on the first reboot.

   Note: if changes to the deskset are made within URC configuration, the handset must be rebooted to obtain its new configuration binaries.

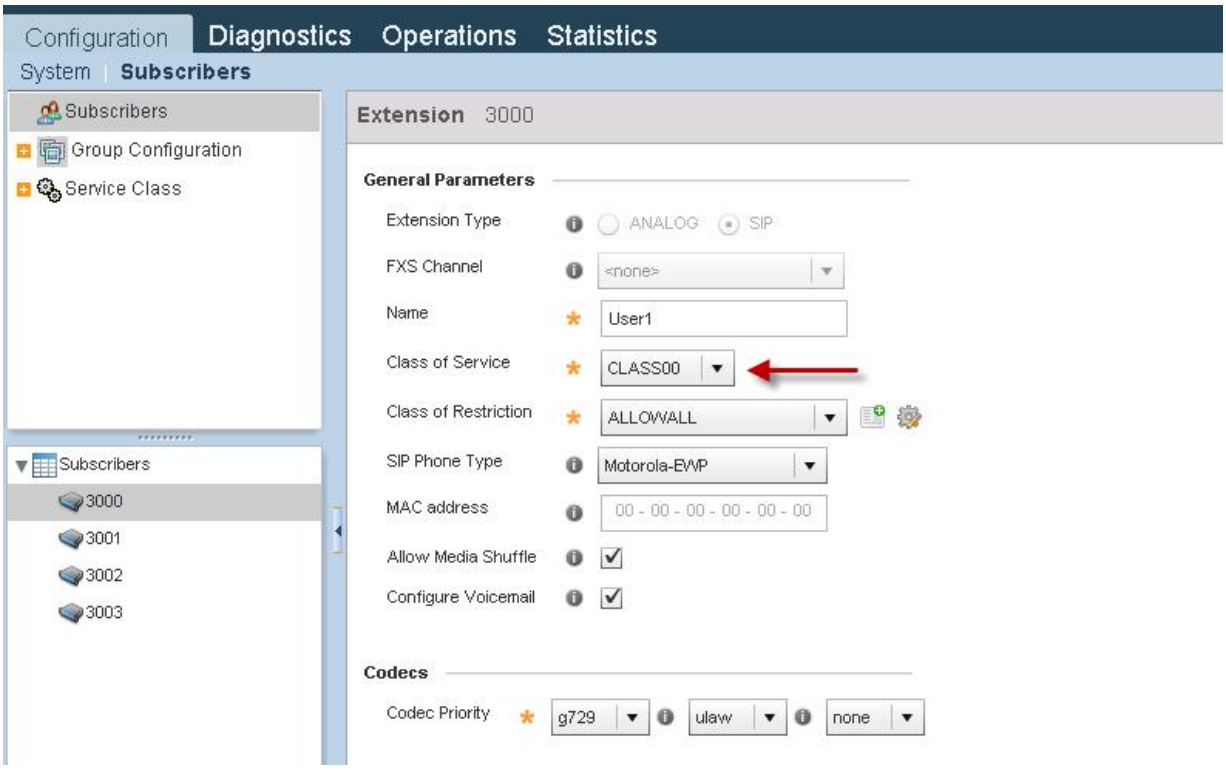


5.3 Subscriber Class of Service

1. For each subscriber on the system a default Class of Service 00. There are 11 CoS groups available in the URC configuration server.

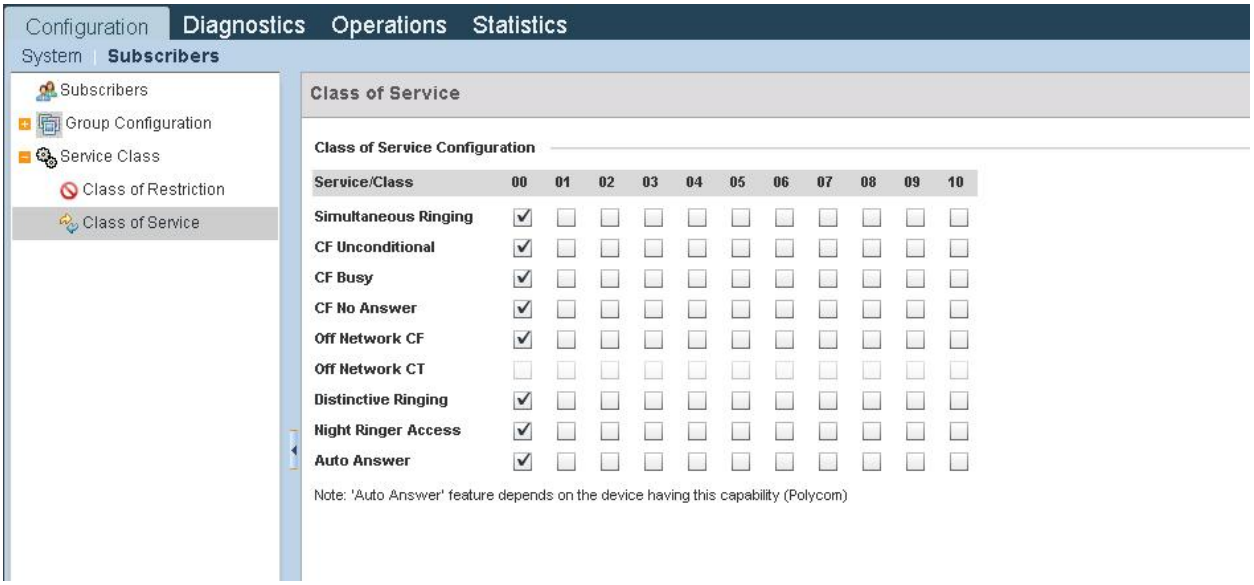
2. Navigate to Subscribers configuration screen.

3. Set the configuration for the Class of Service to Class00.



4. Next select the ***Subscribers/Service Class/Class of Service.***

5. Select the Class00 and enable the appropriate CoS features that you want to enable for the subscribers.



6. If changes have been made to the deskset or EWP handsets, and a change of CoS configuration will require a reboot of the phone set to download its binaries.

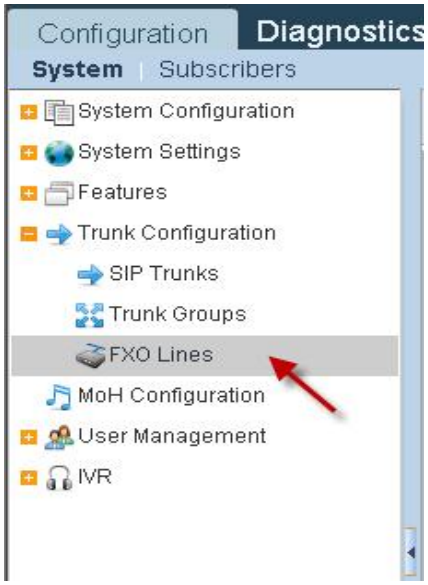
7. On the phone set, the user will then be able to activate/deactivate the feature service, weather this is handled by feature code or TUI interface.

5.4 Trunk Groups Setup

Trunk Groups will be required to setup outside dialing to the PSTN public network or central office. In this example, 2 FXO analog trunk lines will be configured and added to the trunk group. The trunk group will bind the 2 access as a single entity for routing calls to the external network.

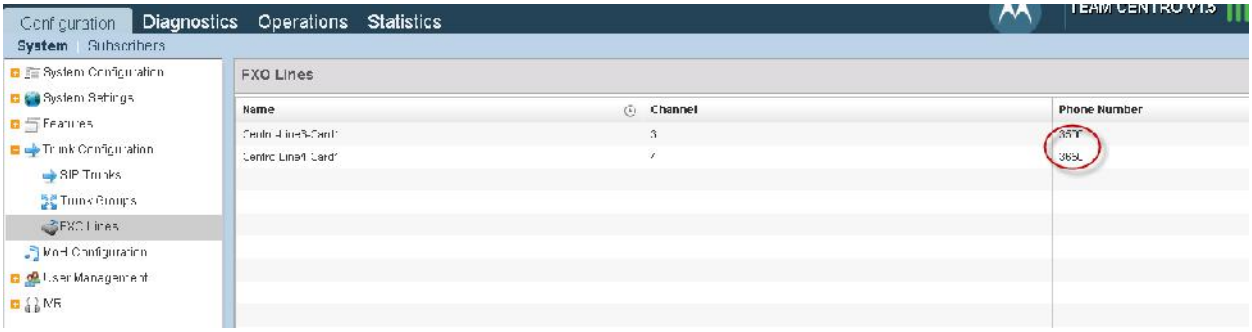
Procedure:

1. Navigate to ***Configuration/System/Trunk Configuration/FXO Lines.***



2. For each FXO line that is assigned to the URC server configuration, a phone number will need to be assigned to the physical trunk port.

   In this example, the FXO channel 3 and 4 are being used and allocated to the PBX system.



3. Select the each FXO line to be used in this trunk group and enter a unique phone number for each line needed.

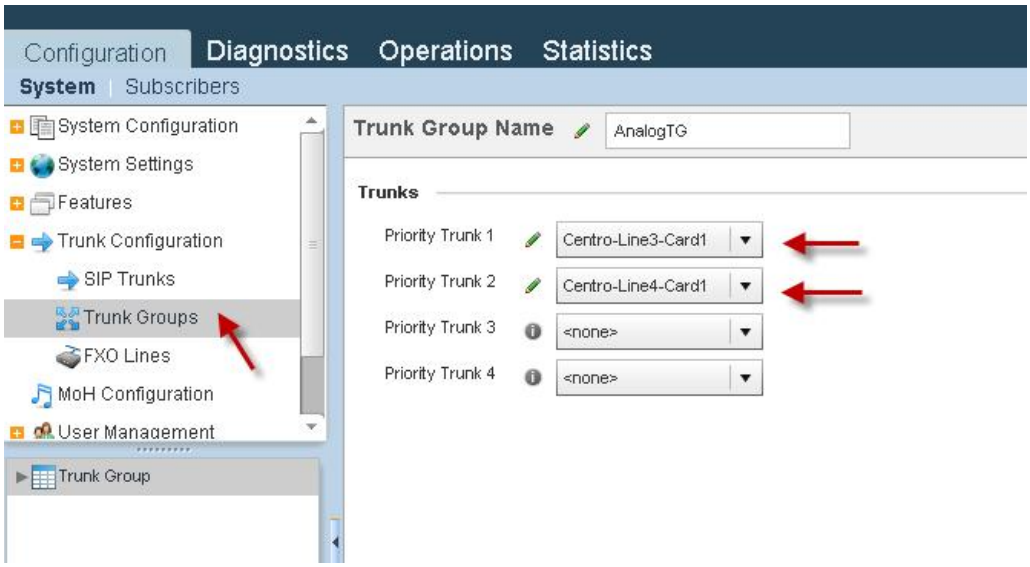
   This number will be used for incoming routing as well as DN identification of that analog trunk line.

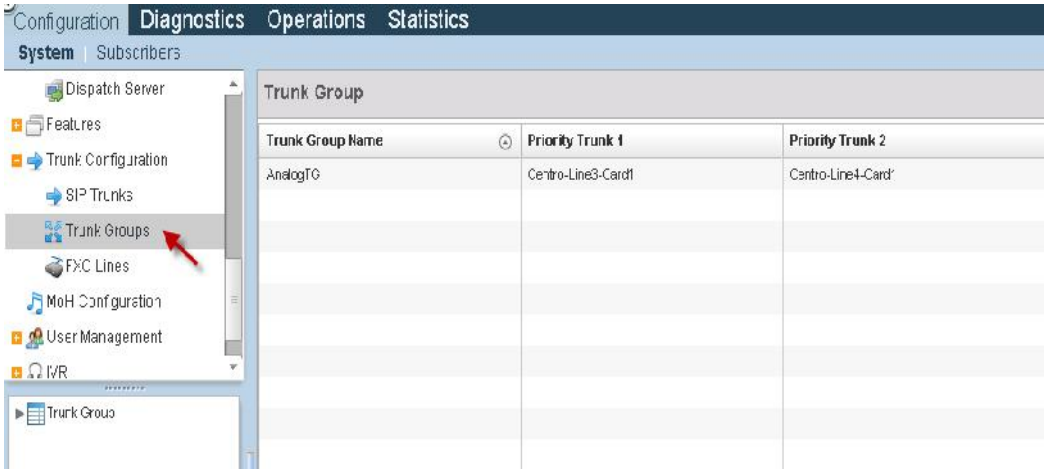
4. Next select ***Trunk Groups*** under ***System Configuration*** tab

5. Select ***ADD*** on the lower right hand corner of the ***Trunk Groups*** screen to create the trunk group for these FXO lines.

6. Enter the ***Trunk Group Name:***

7. Add the FXO trunk priorities to route calls on this





8. Click OK to save the configuration of this trunk group.

5.5 Dial Plan Configuration

The Dial Plan is used to configure the telephone number ranges to be supported by Centro. Each number range tells Centro whether or not to take calls made to phone numbers lying within the defined Number Range. If a dialed or received telephone number does not lie within a Number Range, Centro will not know how to handle the call, and the call will fail.

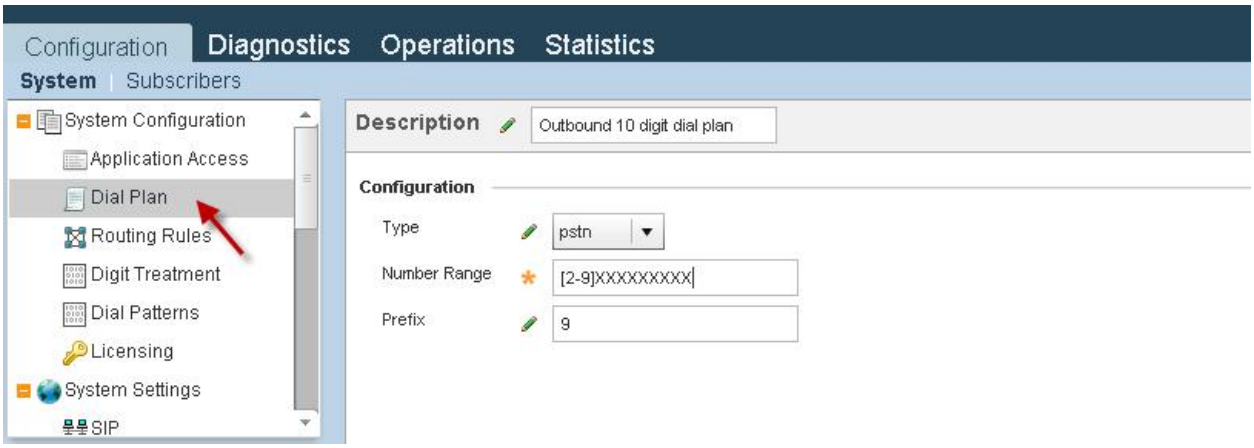
Centro supports three types of number ranges:

- **PSTN:** This Type identifies number ranges which pertain to outgoing calls to the PSTN.
- **Public:** This Type identifies number ranges which apply to incoming calls. This is usually the range of publically routable numbers which have been allocated to the enterprise by the public Telco provider.

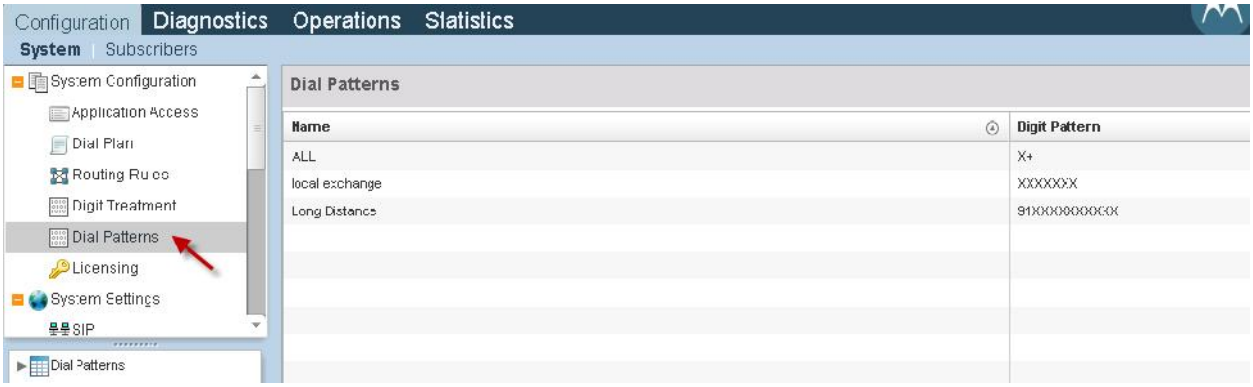
1. To configure the Extension Dial Plan click on "Configuration", "System", then expand "System Configuration".

2. Select Dial Plan and click "Add".

3. Fill in the following parameters:
   a. Description: Outbound ten digit dialing
      Type: pstn
   b. Number Range: [2-9]XXXXXXXXX
   c. Prefix: 9 (represents dialing 9 to get an outside line)



4. Click “OK” when finished. Notice the Navigation window now contains another frame. The green plus sign and the red minus sign on the bottom allow you to add and delete dial plans.



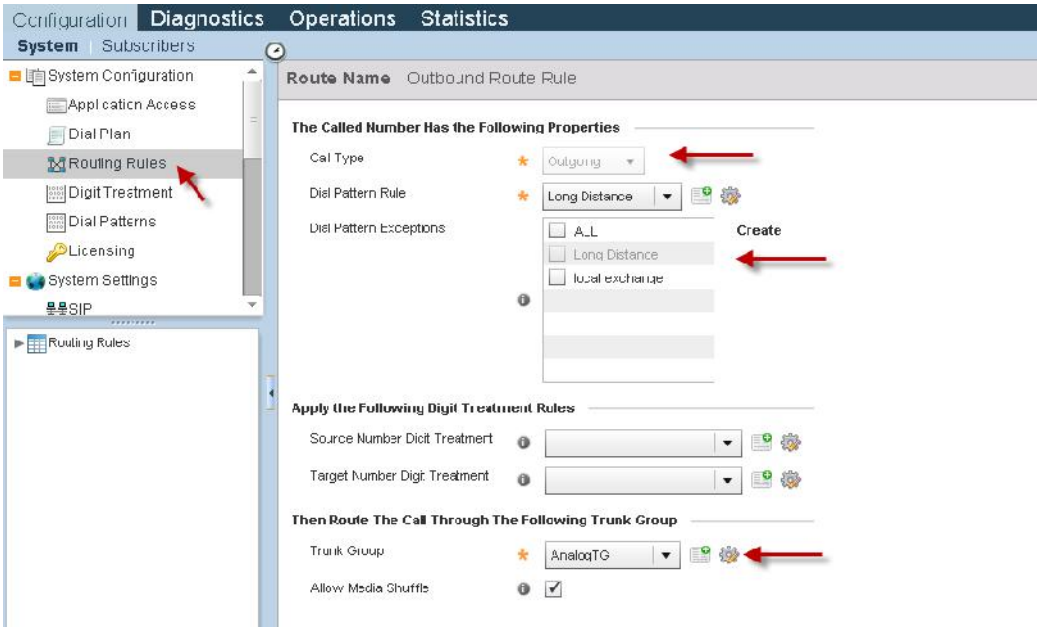
5.6 Routing Rules

1. A routing rule will map the dial patterns to the the appropriate trunk group for call routing purposes.

   In this example, the long distance dial pattern will be associated to a Route Rule as well as the Trunk Group used for these call routes.

2. Enter the following parameters:

   Route Name: Outbound Dial Rule
   Dial Pattern Rule: Long Distance - previously created
   Trunk Group: AnalogTG – previously created



3. OK to save the configuration.

   If correctly configured, this will allow for 11 digit calls to be sent out the AnalogTG which includes 2 FXO ports for 2 simultaneous calls to be made out this new trunk group.

5.7 Music On Hold

The URC PBX server will provide Music on Hold functionality. When a user goes on hold, the wav file that is uploaded to the server will be played to the on-hold user.

Procedure:

1. A wav audio file must be created or existing the following format = PCM, 8KHz, 16 bit, mono. If the file is not in the correct format, the on hold music will not play.

2. To upload the MoH file, navigate to the ***Configuration/System/MOH Configuration.***

3. Click Add to upload a wav file to the URC server.

4. Click on the Select File Button to browse and upload a wav file from your PC/Laptop.

For feature configuration refer to the Centro_Configuration_Menu_Guide_v1.5_WING document.